

The magazine of modern homesteading

COUNTRYSIDE

& Small Stock Journal

SPECIAL SUBSCRIBER ISSUE
FALL/WINTER 2021

THE BEST OF LIVESTOCK HEALTH

GIVING
CATTLE
INJECTIONS

RAISING
PIGLETS
WITH SUCCESS

THE BEST
FEED FOR
RABBITS

HORSE
HOOF
TREATMENT

Plus
Goat Care,
Month to
Month

iamcountryside.com

TOP 10 REASONS YOU NEED A



1. Made in the USA
2. Carries a 3-Year Warranty
3. Costs Pennies a Day to Run
4. Internal Safety Feature
5. Easy to Clean
6. Safe Infrared Radiant Heat
7. Multiple Uses
8. Built by Hand to Last
9. 5-Star Ratings
10. Livestock will Love You!



WWW.SWEETERHEATER.COM
715.651.9757



A book for every stocking!
BUY 3 BOOKS, GET 1 FREE

shop.iamcountryside.com

BOGO!
Buy 3 books
get 1 FREE!



VIEW FULL SELECTION ONLINE. HURRY, ENDS 12/15/21!

Order early for holiday delivery.

Some exclusions apply. Available only online. Add 4 books to your cart and you'll get the lowest priced one for free! Discount will be shown during the checkout process.

CONTENTS

The Best of Livestock Health | Special Subscriber Issue

IN THIS ISSUE

- 7 Editor's Letter
- 8 I Am Countryside
Land Between the Lakes
By Steph Merkle



BEEKEEPING

- 12 Natural Ways to Repel Pests in the Hive
By Angi Schneider
- 14 As Busy As a Bee
By Dorothy Rieke
- 18 Feeding Honey Bees
By Josh Vaisman

POULTRY

- 20 Balance Your Chicken's Diet at all Ages
By Rebecca Sanderson
- 24 All Cooped Up: Typhoid Pullorum
By Lacey Hughett
- 26 Preventing Coccidiosis in Chickens
By Jeremy Chartier
- 29 Flock Files: Poultry Wound Care
By Rebecca Sanderson
- 30 Chicken Mind Health: Avoiding Behavior Problems
By Tamsin Cooper



SHEEP

- 34 Pink Eye in Sheep
By Janet Garman
- 36 Dead Ram Walking: Treating Sick Sheep Symptoms
By Laurie Ball-Gisch
- 40 Sheep Giving Birth: Tips for Successful Lambing
By Laurie Ball-Gisch

CATTLE

- 46 How to Treat Foot Rot in Cattle, Goats, and Sheep
By Janet Garman
- 48 Giving Cattle Injections Safely and Effectively
By Heather Smith Thomas
- 52 Watering Cattle in Winter
By Heather Smith Thomas
- 54 Preventing and Treating Cattle Scours in Calves
By Heather Smith Thomas
- 56 How to Treat Colicky Calf Bloat
By Heather Smith Thomas

GOATS

- 60 Goat Symptoms You Should Never Ignore
By Katherine Drovdaahl
- 64 Goat Care, Month to Month
By Lacey Hughett
- 66 Trimming Goat Hooves for Overall Health
By Janet Garman
- 70 Tips for Weaning Dairy Goats
By Kate Johnson
- 73 Goat Notes: Preparing for Kids
By Kate Johnson

PIGS

- 74 Raising Piglets: Off to a Successful Start
By Janet Garman
- 76 8 Pig Diseases the Small Producer Should Know
By Janet Garman
- 78 Feeding a Pig for Market
By Mel Dickinson

Join the *Countryside* Community!

Tag us on Instagram, share your stories on Facebook and find new inspiration on Pinterest. We read all the comments and love the feedback!

RABBITS

- 80 **5 Meat Rabbit Facts to Know Before You Buy**
By Maat Van Uitert
- 82 **How the Bot Fly Causes Warbles in Rabbits**
By Janet Garman
- 84 **A Guide to the Best Feed for Rabbits**
By Maat Van Uitert
- 86 **How Rabbit Farming Differs in the Winter**
By Marissa Ames
- 88 **Rabbit Cages or Colonies: Which is Better?**
By Maat Van Uitert

HORSES

- 90 **Diagnosing Snakebite Symptoms in Horses and Livestock**
By Heather Smith Thomas
- 92 **Horse Hoof Abscess Treatment**
By Heather Smith Thomas

DOGS

- 94 **Dog Vision**
By Stephenie Slahor, Ph.D.
- 96 **Treating a Dog Paw Pad Injury**
By Janet Garman
- 98 **Recognize Signs of Parvo in Your Dog**
By Janet Garman

ON THE COVER

Cattle on a ranch in northern California.
Photo credit
gettyimages.



INSTAGRAM
@iamcountryside
#iamcountryside



FACEBOOK.com/
iamcountryside



PINTEREST.com/
iamcountryside



**MORE TO
EXPLORE**
AT
IAMCOUNTRYSIDE.COM



**ONLY
\$10 MORE
PER SIX ISSUES**

**UPGRADE TO
ALL-ACCESS PERKS:**
**DIGITAL REPLICAS OF YOUR
FAVORITE ISSUES**
**FREE SHIPPING IN OUR STORE
EVERY DAY (U.S. ONLY)**
LIVE CHAT WITH EXPERTS
DIGITAL ARCHIVES SINCE 2014
EXCLUSIVE STORIES ONLINE

**CALL
970-392-4419
TO UPGRADE TODAY**

COUNTRYSIDE

& Small Stock Journal

Special Subscriber 2021
The Best of Livestock Health

CountrySide & Small Stock Journal

Includes *Small Stock Magazine* Founded 1917 by Wallace Blair and
CountrySide Magazine Founded 1969 by Jd Belanger.

EDITORIAL

Ann Tom, Editor
editor@countysidemag.com

Marissa Ames
Senior Editor

Samantha Ingersoll
Publication Designer

Ana Skemp
Audience Engagement

OPERATIONS

Danielle Werbeck
General Manager

Chad Kuskie
Operations Manager

Melonie Bryant
Customer Service Specialist

ADVERTISING

Alicia Soper, Advertising Director
asoper@countysidemag.com
(715) 829-7330

COUNTRYSIDE'S MAIN HOMESTEAD

CountrySide
P.O. Box 1690, Greeley, CO 80632
iamcountyside.com

SUBSCRIPTIONS (U.S. FUNDS):

\$29.97 for six print issues, \$29.97 for digital
only, \$39.97 for all-access (print + digital)

CountrySide Subscriptions
P.O. Box 1690, Greeley, CO 80632
970-392-4419

iamcountyside.com/all-membership

PRINTED IN THE U.S.A.

CountrySide & Small Stock Journal (ISSN 8750-7595; USPS 498-940) is published bimonthly with one special issue by CountrySide Publications, P.O. Box 566, Medford, WI 54451. Periodicals postage paid at Medford, WI and additional mailing offices. ©2021 CountrySide Publications. CountrySide Publications is owned and operated by Fence Post Co. The views presented here do not necessarily represent those of the editor or publisher.

All contents of this issue of *CountrySide & Small Stock Journal* are copyrighted by CountrySide Publications, 2021. All rights reserved. Reproduction in whole or in part is prohibited except by permission of the publisher.

POSTMASTER: Send all UAA to CFS. (See DMM 707.4.12.5);

NON-POSTAL AND MILITARY FACILITIES: Send address corrections to *CountrySide Subscriptions*, P.O. Box 1690, Greeley, CO 80632

Our Philosophy

At *CountrySide*, our purpose is to inspire self-reliant living on any level.

We acknowledge that the path to self-sufficiency is as unique as the person who accepts the journey.

We strive to strengthen the homesteading movement by sharing the diverse voices and knowledge of today's practitioners.

We teach our readers how to grow and raise their own food; build, fix, and craft with their own two hands; and walk as gently on this planet as possible.

Contact Us

PHONE: (970) 392-4419

ADDRESS: P.O. Box 1690, Greeley, CO 80632

ADVERTISING OFFICE: advertising@countysidemag.com

EDITORIAL OFFICE: editor@countysidemag.com

CUSTOMER SERVICE/BOOK ORDERS:
customerservice@countysidemag.com

iamcountyside.com





FROM THE EDITOR

WHERE WOULD WE BE WITHOUT LIVESTOCK on our homesteads? Unfortunately, as with anything, livestock sometimes fall ill. While this is not always an easy thing to deal with, it's part of being a homesteader and keeper of livestock.

In this special issue, we have included some of our best livestock care articles in hopes to help you out when your flocks, herds, or swarms are feeling under the weather.

Ants are often found trying to invade beehives to fill up on all of that natural sweetness. Angi Schneider shares two inexpensive, natural ways to repel ants while Josh Vaisman explains how to feed honey bees successfully.

Let's move out to the poultry yard. Have you had problems with your chickens pecking each other's feathers out? Or a rooster being aggressive toward you? Tamsin Cooper will help end these bad behaviors and Jeremy Chartier discusses how to prevent coccidiosis in chickens.

If you're not familiar with raising pigs, you may think that they are a type of garbage disposal. Although they can eat a variety of foods, there are several foods

they should never eat. Mel Dickinson highlights what foods pigs need to stay away from for their own well-being.

Other livestock on your homestead may include cattle. Heather Smith Thomas discusses several cattle/calf health issues such as: treating colicky calf bloat, treating cattle scours in calves, giving cattle injections, and watering cattle in winter.

I have only mentioned a few of the many helpful articles included in this Best of Livestock Health issue. I hope they will give you some insight should you run into health problems on your homestead. ©



Ann Tom

Ann Tom
Editor, *Countryside*

HAVE AN IDEA OR STORY TO SHARE, A QUESTION TO ASK, PERHAPS AN ANSWER TO A QUESTION? WE WANT TO HEAR FROM YOU!

Countryside Editor Letter
P.O. Box 1690, Greeley, CO 80632
Or email: editor@countrysidemag.com



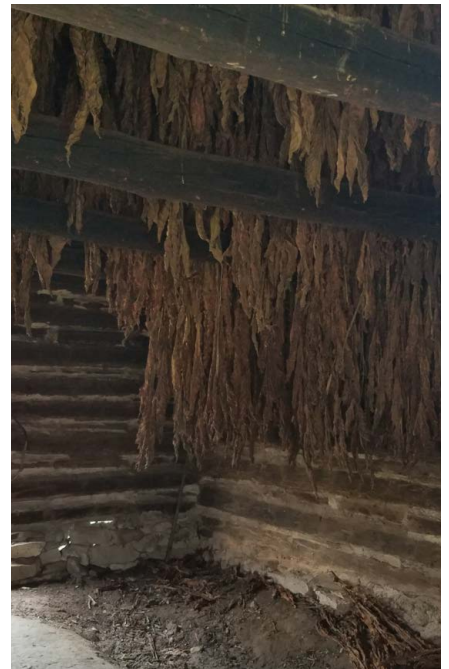
I AM COUNTRYSIDE

LAND BETWEEN THE LAKES

Photos and Story by Steph Merkle



TOP: Just beyond the crop field, the chicken house provides a safe haven for the mixed flock residents: Dominique chickens and Black Cayuga ducks. Beyond the chicken house is the single pen house and crib, known as the “first generation” house. Early settlers commonly built a one-room or single “pen” log home. By mid-century, kitchens were added. **BOTTOM LEFT:** Hog lot and crib. Typically hogs free-ranged and foraged for acorns, chestnuts, and hickory nuts. **BOTTOM RIGHT:** The tool barn provided sheltered workspace for farmers to build home furnishings and repair implements. Farmers stored tools and equipment in one of the tool barn “cribs” while plows, wagons, and buggies stayed under a barn lean-to or in a breezeway.



MIDDLE: The log cabin was constructed by stacking tree trunks one on top of another and overlapping the logs at the corners. The development of interlocking corners by notching the logs at the ends resulted in strong structures that were easier to make weather-tight by inserting moss or other soft material into the joints. **RIGHT:** Dark-fired tobacco's name comes from the curing process. Farmers "fired" and "cured" this 13-month crop by building smoldering fires in floor trenches of the barn.

SANDWICHED BETWEEN Kentucky and Barkley Lakes in Western Kentucky and Tennessee, you'll find one of the most significant blocks of undeveloped forest in the eastern United States, rightfully coined Land Between the Lakes National Recreation Area.

In the heart of Land Between the Lakes is an extraordinary living history museum known as Homeplace 1850s Working Farm. The Homeplace is an example of an Upper South "yeoman" or middle-class family farm before the Civil War. Many features identify this as a southern farm — separate animal barns and pens, breezeways, and covered porches to provide shade for both man and beast.

Visitors to the Homeplace can experience the tools and techniques used by homesteaders of the era, freely explore the historic buildings, and visit with the living history interpreters who work the homestead using only what was available in the mid-19th century. Several heritage breeds reside on the homestead, including Dominique chickens, Black Cayuga ducks, and Border Leicester ewes and wethers. The interpreters cultivate many varieties of garden plants and field crops, most from heirloom seeds. Much of what's produced at the Homeplace is available for purchase in the gift shop, including soaps, raw wool, heirloom seeds, loom-spun rugs, and more. Any given day on the farmstead, interpreters smoke meats, make sausage, weave baskets, shear sheep, collect eggs, and restore and make period-specific tools. Much like today, there's no end to the chores that need attention and visitors get a front-row seat.

There are more than a dozen structures on the Homeplace, including two primary residences. (Note: The living history interpreters do not live on the farm.) The two main homes are referred to as the double pen house and the single pen house. The double pen house features an open, central hallway that separates two equal-sized "pens" or rooms. The family used one pen for living space, while the other pen — the parlor — welcomed visitors. The open central hallways face the prevailing wind and served as a cool, shady setting during the oppressive summer heat. By mid-century, kitchens were added.

Other notable buildings include the smokehouse, blacksmith shop, tool barn, tobacco barn, wood shed, and several pens and pastures to accommodate oxen, mules, sheep, chickens, and pigs.

Large vegetable gardens and cribs provided the main source of produce. Families ate fresh vegetables or preserved them for winter use. Today, the interpreters plant heirloom seeds and provide historic vegetables for the Historic Foodways program. This program focuses on meticulously documenting the food sources and uses of the time period. Much of what they have learned is preserved in period-specific cookbooks.

Land Between the Lakes National Recreation Area offers many other not-to-be-missed destinations for those who want to connect with the land. Pencil in time to visit the Elk & Bison Prairie, Woodlands Nature Station, and Golden Pond Planetarium. Land Between the Lakes National Recreation Area serves as a demonstration site for public land management, outdoor recreation, and environmental studies to develop best practices. 

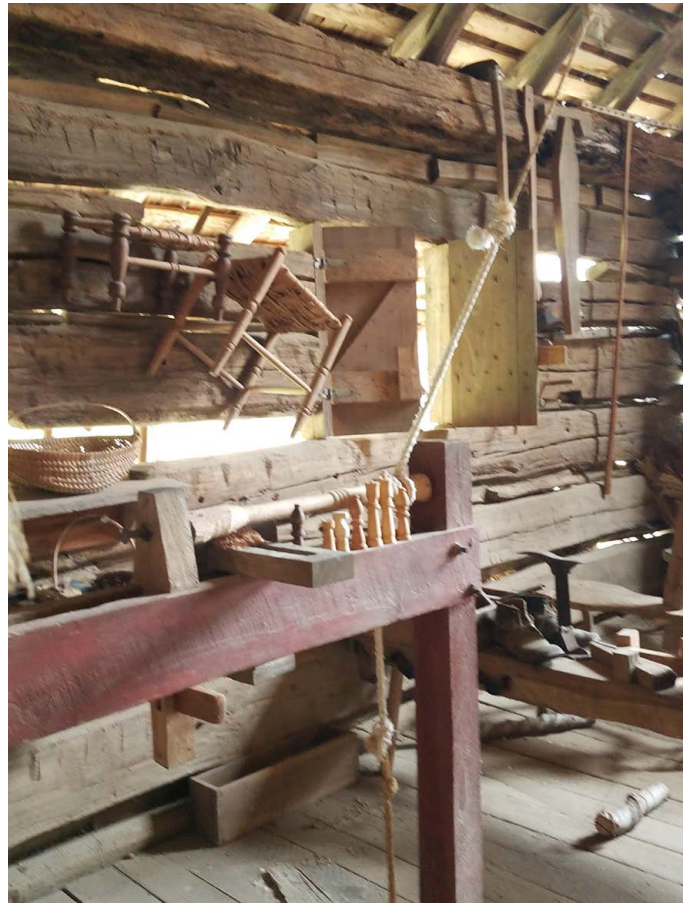


THE HOMEPLACE IS AN
EXAMPLE OF AN UPPER
SOUTH “YEOMAN” OR
MIDDLE-CLASS FAMILY
FARM BEFORE THE
CIVIL WAR.





In the smokehouse, dry salt curing preserves the meat, while the smoking process flavors it.



FOR MORE INFORMATION AND TO LEARN ABOUT EVENTS AND ACTIVITIES:

The Homeplace 1850s Working Farm:
landbetweenthelakes.us/seendo/attractions/homeplace/

facebook.com/Homeplace1850sFarm

Land Between the Lakes:
landbetweenthelakes.us/about
[Facebook.com/LBLNatlRecArea](https://facebook.com/LBLNatlRecArea)

Natural Ways to Repel Pests in the Hive

Managing Ants in a Beehive, and More

BY ANGI SCHNEIDER



Homemade wax moth lures are easy to make and are effective at reducing the wax moths in your apiary.

THERE IS NOTHING QUITE LIKE the sights and sounds of bees buzzing around, gathering pollen and nectar on a warm summer day. Summer and bees just seem to go together; unfortunately, so do summer and pests. And beehives are often the target of pests such as varroa mites, ants, wax moths, and mice. Fortunately, there are many natural ways to control these pests. After all, no one wants ants in a beehive.

By practicing integrated pest management, you can do quite a bit to help your bee colonies stay healthy and strong. The idea behind integrated pest management is that you use various tools to prevent and treat pests instead of using chemicals.

Integrated pest management for bee colonies starts with deciding what race of bees to purchase. Some bee races are more resistant to certain pests than others; for instance, if varroa mites are a concern for you, consider purchasing Russian bees, which tend to fair well against varroa mites.

Another part of pest management is using physical deterrents to keep pests out of the hive in the first place. It also includes using traps to kill and remove the pests once they do get in.

Botanicals can be used to repel pests from your apiary. Planting herbs such as thyme and mint around the hives can help repel other insects like wax moths and varroa mites. You will need to plant quite a bit; this is one time where mint's invasiveness is a positive thing. Also, try planting close to the hive opening if possible.

Chemicals should always be used only as a last resort, or not at all. Most chemicals will weaken a hive over time, which is not what we want. We want to do everything we can to help our hives be healthy and strong since healthy and strong hives have a wonderful ability to deal with pests on their own.

How to Repel and Kill Ants

Ants are often found loitering around trying to get into beehives. And who can blame them? The hive is full of wonderful sweetness. A few ants here and there aren't a problem, and a healthy hive can easily defend itself against them. But when there are a lot of ants in a beehive, the bees may abscond by filling up with honey and leaving the hive.

Getting rid of ants in a beehive is pretty simple, and you want to start with the least invasive methods first.

The best way to keep ants out of your hives is by putting your hives on a platform and creating a moat of oil around the legs. Plus, when you're working in the hives, it's nice to have them taller and up off the ground, so this is a secondary benefit.

To create an oil moat, you will need to put each leg of your platform in a can or bucket. The size of the can or bucket will depend on the size of the legs. You don't need the can or bucket to be deep; you just need it wide enough to get the legs in. Once you have the legs in the can or bucket, put a few inches of oil in the can.

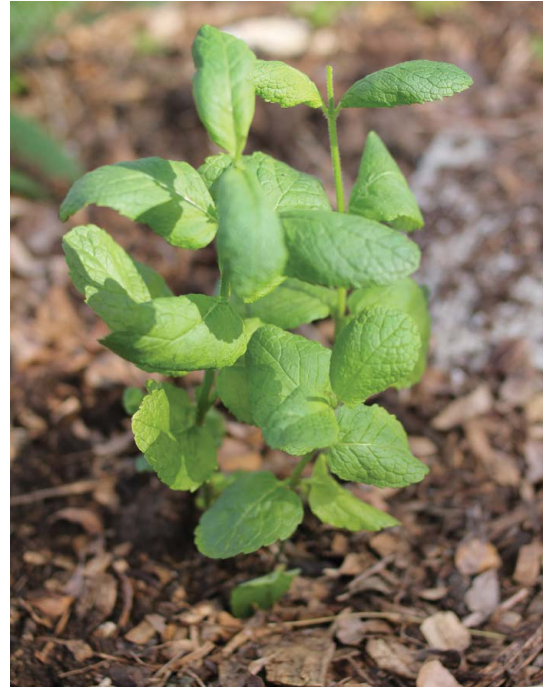
Many beekeepers use old motor oil; however, I prefer to use food-grade oils such as vegetable oil. When it rains, the oil will probably overflow the bucket and get into your soil. Motor oil is a contaminant to the soil, and you don't want your bees foraging flowers that are



Sprinkling cinnamon around the hive.



Dusting the hive with powdered sugar is a common way to get rid of some varroa mites.



Mint plant.



A moat of oil around the legs of a beehive.

growing in contaminated soil. You will need to refill the oil periodically. When the ants climb up the side of the can and try to cross the moat, they will fall into the oil and die. It sounds harsh, but it will keep ants out of the beehive.

Botanicals are a great way to repel pests from a beehive. While mint can be used as a wax moth treatment, cinnamon can be used as an ant deterrent. Cinnamon can be used inside and outside of the hive to keep ants off the beehive. To use it outside the hive, sprinkle it liberally on the ground around the hive. To use cinnamon inside the hive, sprinkle it on the inner cover. The bees don't mind, but the ants don't like it and will stay away.

These two non-invasive practices should keep the ants out of the hives. This will mean there's one less pest the colony needs to worry about and it can focus on other pests. Some pests are harder to keep under control even with good integrated pest management; this includes varroa mite treatment.

Ants in a beehive are really more of a nuisance than a huge beekeeping issue if you monitor the hives and use these measures to repel the ants. Have you found natural ways to keep ants out of your beehives? We'd love to hear about it. 🍯

ANGI SCHNEIDER lives with her family along the Texas Gulf Coast on 1.5 acres where they keep chickens and bees along with gardens and an orchard. Angi shares her simple living journey at:

Schneiderpeeps.com
Facebook.com/schneiderpeeps
Instagram.com/schneiderpeeps

AS BUSY AS A BEE

BY DOROTHY RIEKE



BECAUSE BEES COME IN a variety of colors, shapes, and sizes, they are attractive additions to gardens. In fact, bees enhance your garden creating a special kind of scene, including vivid colors and much activity.

In the United States, there are over 4,000 species of native bees. Bees visiting flowers include:

- The fuzzy, colorful yellow-and-black striped bumblebees.
- Metallic green sweat bees.
- Squash bees.
- The honey bees with yellow and brown bodies with back stripes.

Yellow and black are “warning colors,” warning people to avoid the stingers.

Honey bees prefer flowers full of nectar, brightly colored with petals that are usually blue or yellow or a mixture of these. They are drawn to those sweetly smelling and

those open during the day. They also prefer those with “landing platforms.” In addition, they like flowers that are tubular with nectar at the base of the tube.

Bees are good at pollination, which is necessary for plants to reproduce, so most plants depend on bees, butterflies, or other insects to pollinate.

Then, how do bees find a patch of flowers to pollinate? Honey bees, especially, communicate through a “waggle” dance. This occurs when the scout bees return to the nest to inform other bees about a flower patch and where it is located.

What is pollination, and why is it important? Without pollination, an essential part of plant reproduction does not take place. In pollinations, pollen from a flower’s anthers, the male part of the plant, rubs or drops onto a pollinator. The pollinator then takes this pollen to another flower, where the pollen sticks to the

stigma (a plant’s female part). Only after being pollinated, the flower then yields fruit and seeds.

Truthfully, down through the years, plants have developed many complex ways of attracting pollinators. Of course, in turn, pollinators have developed specialized physical traits and behaviors that enhance pollination efforts. Both the plant and the pollinator gain benefits from the pollination process.

During this act, the bees often buzz. Why do some bees buzz? Some plants such as blueberries and tomatoes release their pollen through two tiny spores in each anther. Bees bite the anthers, hold tight, and buzz to shake the pollen out of the flowers.

Truthfully, this pollination business is not a part-time job. Successful pollination requires year-round efforts because plants have different flowering times. If plants

bloom throughout the growing season, these provide pollinators with a constant food supply.

In fact, every blooming plant is a target for pollinators' searches. Pollinators like certain flowers because of the nectar and pollen. Nectar is a food that gives them the energy to travel to and from their homes.

Interesting and true, native plants are especially good at creating pollinator habitats. They offer the best adaptation to their environment, co-existing with bees, butterflies, and other pollinators in their areas. So, it is advisable to utilize native plants, but other plants may be introduced. Most plant species offer great floral rewards for pollinators.

Perhaps one of the first considerations to keep gardens clean of pests is to eliminate the need for pesticides. They are not bee-friendly. Instead, count on ladybugs, spiders, and praying mantises to keep pests in check.

Bee-friendly plants attract bees and attract additional pollinators such as butterflies, hummingbirds, and others. Perhaps one of the most popular plants, especially good at attracting bees, is bee balm. This is a red, purple, or pink perennial from the mint family. It blooms from mid-summer until early fall. Because this plant grows two to four feet high, it is great as a background plant. Plants should be spaced at least 18 to 24 inches apart in rich, well-drained soil. This plant, smelling a bit like oregano, needs good air circulation because it develops powdery mildew on the leaves without circulation. Be sure to water well when planting during the spring or fall. Bee balm likes sunshine. However, it can be grown in partial sun, but it will not bloom as well.

LAVENDER PLANTS

Lavender is often mentioned in connection with easy-to-grow herbs. In fact, the Royal Horticultural Society recently launched the

"Perfect for Pollinators plant list," which is designed to enable gardeners to select the best plants for insects, bees, and butterflies. Lavender is one of the plants mentioned for pollinators on this list.

This plant, an insect-friendly plant, is very versatile. It is an excellent edging plant for paths and borders. Every garden should

include some lavender bushes as they keep themselves neat with only an annual pruning. Honey bees and bumblebees relish its scent and are always on the lookout for it. This plant's attractive foliage puts it in the ornamental section for landscaping; it is also used as a medicinal herb.

Some businesses have tried to entice bees into every garden by

MANN LAKE

EVERYTHING YOU NEED FOR BEEKEEPING



Kendra,
Digital Marketing Specialist

PRODUCTS TRUSTED AND SOLD BY BEEKEEPERS.

\$10 OFF \$100 ORDER WITH CODE: COUNTRYSIDE10

MANNLAKELTD.COM 800-880-7694

**Must be signed in to use code. Some exclusions apply. Offer ends 1/1/22*



promoting a special offer on the purchase of lavender plants, so gardeners can fill their gardens with plants that will draw nectar-loving bees and other insects to continue with the essential business of pollination.

Always look for the “bee-friendly” labels shaped like a bee on plant labels in local garden centers; these help gardeners select the best plants for drawing pollinators to gardens.

CUCUMBERS

Cucumbers are veggie crops that are totally bee-friendly. The flowers that pop up along the plant before it begins to grow cucumbers contain nectar and pollen that bees like. Bees are the main pollinators for cucumbers carrying pollen from male cucumber flowers to female cucumber flowers. This action allows the female flower to produce a cucumber.

In some cases, cucumbers are not pollinated. One can hand-pollinate these plants, and, truthfully, hand-pollinated cucumbers produce better crops because hand-pollination maximizes the plant’s efficiency. Do not use the first flowers for pollination; these are usually male flowers. Female flowers begin to bloom only about seven days or more after the first flowers.

To hand pollinate, take pollen from a fresh male cucumber flower using a cotton swab or a tiny paintbrush to remove the stamen from the flower and deposit the pollen in the ovary of the female flowers. Of course, this is tedious work as pollen is small and sticky. However, this is one solution if cucumbers are not producing.

MARIGOLD PLANTS

Unusual but true, marigold, an annual flower, is often planted near tomato, squash, corn, radishes, onions, and peppers because pollinators are attracted to colors. During that time, bees and other pollinators gather around the marigolds and vegetables.

The important fact about these flowers is that they bloom right up to and through the early frosts attracting and feeding pollinating insects. Surprisingly, their nectar is just about as good as any other flower blooming at this time. Because these flowers are some of the last ones standing, they are very useful to bees and other insects. This flower is especially adaptable, improving its hardiness over time in new environments.

GOLDENROD

Goldenrod is an excellent late-season pollinator plant. Honeybees primarily collect large amounts of goldenrod nectar before winter weather. Other bees use this pollen for provisions in late-season nests.

It isn’t unusual for beekeepers to depend on goldenrod as their colonies’ primary winter food

source. Some reported gains amounted to 50 to 80 pounds of nectar per colony. This honey from goldenrods is often darker, thick, somewhat pungent in aroma, and quick to granulate. Sugar content in such honey is approximately 33%.

Goldenrod thrives in open areas with occasional mowing to remove the competition from nearby trees and shrubs.

Certain kinds of goldenrod seeds are available in nurseries. Showy goldenrod (*Solidago speciosa*), Riddell’s goldenrod (*S. riddellii*) and stiff goldenrod (*S. rigida*) are all excellent “bee” plants.

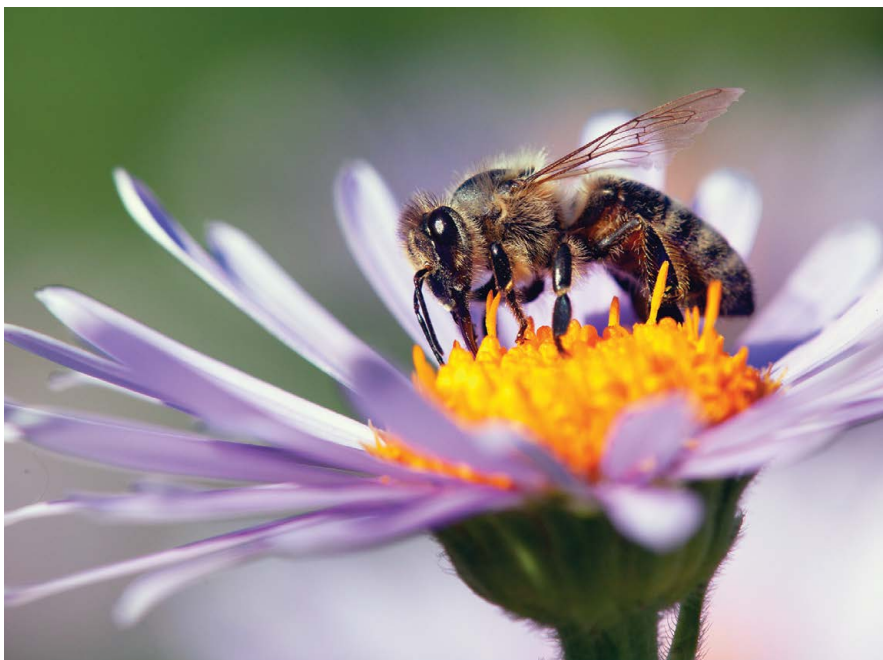
BUTTERFLY BUSHES

Another plant, blooming from mid-summer through early fall and favored by bees, is butterfly bushes. These fast-growing bushes produce pink, purple, blue, or white flowers. They are irresistible to bees because of their scents. These bushes have been called a “magnet for bees, hummingbirds, and moths.” However, keep in mind that these plants can be invasive and can crowd out native plants.

Pollination is essential for a healthy ecosystem. Many fruits, such as apples, oranges, avocados, pears, plums, cherries, and other fruits that we eat, depend on pollinators.

Recently, there has been a decline in pollinator species as a result of habitat loss and pesticides. Now, there is an effort to provide sufficient food (nectar and pollen) to reverse the decline of pollinators and provide habitats for bees and butterflies.

Pollinators must be protected. How is this done? First, grow more gardens and fewer lawns. As far as the grass is concerned, grass in a lawn is useless as far as pollinators are concerned. In fact, lawns are habitats for insects. Spend time making space for plants that need pollinating.



Plant native flowers for pollinators. This way, hometown pride can be demonstrated while providing flowers for pollinators. Flowering plants often leads to a boost in pollinator efficiency.

Diversify gardens in size, shape, and color. Variety is the spice of life for bees and other pollinators. Plants of all shapes and sizes attract bees.

Always take full advantage of the blooming seasons by planting a variety of species with different blooming times. That way, pollinators will be in gardens throughout the growing season.

Don't mow as often. This allows pollinators to establish a toehold in a good environment. Mowing every two or three weeks usually works well for pollinators.

By all means, avoid pesticides. These often represent a death sentence for pollinators. Instead, add more insect species, natural enemies such as ladybugs, praying mantises, parasitic wasps, etc.

Bees are essential for the reproduction of flowering plants and are responsible for pollinating crops. There is a need for the intentional planting of pollinator gardens. With the loss

of wild places where flowers and pollinators naturally exist, we must support these essential parts of the ecosystem. 

DOROTHY RIEKE living in southeast Nebraska, is married to Kenneth and has one daughter. She has lived on farms all her life and has raised both chickens and turkeys.

The Answer

"There is definitely a part of you that is superior to all confusion and that part is superior to it right now." This is one response to a number of questions asked by a professional counselor of Vernon Howard. There are five special letters giving numerous insightful answers to life's perplexing problems. The letters are of a very lofty nature which will lead you to a much higher way of living.

Order this booklet by Vernon Howard today!

Send only \$5 (Shipping included) to:
New Life • PO Box 2230-AP • Pine AZ 85544

www.anewlife.org

The INDUSTRIAL QUALITY MILL FOR NON-INDUSTRIAL FLOUR.



TRUE QUALITY LASTS GENERATIONS.

That's why we back our iconic red mills with an heirloom guarantee. It's also why we're so proud to back families who know the enduring, nutrient-rich benefits of home-milled whole grains. www.grainmaker.com

*Grain
Maker*



Get your cozy slippers and moccasins, now. We also carry hats, mittens, and gloves and everything sheepskin including the latest from Emu products. America's bestselling footwear.

Visit us at: 10828 Caledonia Road
Belvidere, IL 61008
815-895-9678
www.completesheepshoppe.com



FEEDING HONEY BEES

BY JOSH VAISMAN



WHEN I PARTICIPATED in the Northern Colorado Beekeepers Association beginning beekeeping class, I was exposed to over 15 hours of education. Needless to say, much of it was new to my brain, and I felt regularly surprised (in a good way!) by what I learned. Thinking back, though, I chuckle to myself at some things that caught me off guard.

The instructor began talking about feeding honey bees during the “A Year in the Bee Yard” section. “Feeding bees?” I recall being genuinely puzzled. I suppose I thought a wild creature whose survival depended on creating and storing an actual food product would be well-equipped to feed themselves. The truth is, they are. However, sometimes even the honey bee’s incredible talents are stretched too far when resources just aren’t available.

In this article, I’ll share my thoughts on why I feed my bees, how to feed honey bees, and when.

WHY I Feed My Bees

Let’s quickly review what resources bees consume to survive and thrive. When people think of honey bees, they tend to first think of honey. Bees make honey. Honey begins its life as liquid flower nectar.

Bees collect this nectar and bring it back to the hive in a special storage organ in their body. During travel, it mixes with natural enzymes that the bee produces. It is stored in wax cells in the hive and dehydrated until it gets to about 18% water content. At this point, it’s delicious honey!

Nectar and honey are the carbohydrate sources that bees need to produce energy for life and work. They store honey to eat during a nectar dearth in the environment.

Bees also collect plant pollen as their source of protein, primarily for raising their brood. Lastly, honey bees consume water just like you and me!

At its most basic level, the “why” behind my decision to feed my bees is simple — if they lack a critical food resource such as honey or pollen, I feed them.

WHEN I Feed My Bees

There are generally two times I feed my bees; fall and spring.

FALL

My bees live with me in beautiful Colorado. The first natural sources of nectar appear around February or March every year as early spring trees begin to bloom and dandelions appear. As spring picks up steam, more and more flowers appear, and the bees forage more and more. By June, we are typically in a full-fledged nectar smorgasbord for my bees. However, Colorado’s known as a winter wonderland for a reason, and by October, sources of nectar for my bees are few and far between. As I write this article looking out at my late November yard, I see nothing my bees can garner food from. Besides, it’s far too cold for them to fly anyway.

To survive a Colorado winter, I feel my bees need a hive that weighs at least 100 pounds. Often honey bee colonies don’t succumb to the cold of winter; they perish due to starvation.

Most of the weight is in honey stored away in the hive. It’s that honey that allows the bees to survive the months without natural nectar.

After I pull my honey supers in late August, I focus on two things; making sure my bees have as few mites as possible and watching the weight of their hives. If they aren’t heavy enough for me by the end of September, I start offering them supplemental food to up their stores. More on that later.

SPRING

As the days grow longer and warmer and the trees begin to bloom, the queen begins laying more and more eggs as the colony strives to grow. In the mind of the hive,

the more bees they have as the nectar begins to flow, the more they can collect and store for the following winter.

A rapid increase in the colony population means a rapid increase in the number of mouths to feed. Sometimes, the colony growth rate outpaces the available natural resources, resulting in the bees consuming most or all of their stores. This applies both to stored honey and stored pollen as they raise new brood.

Beginning in February, I start tracking the weight of my hives again by gently lifting the back of the hive with one hand. By feel, I can tell if the colony is getting too light on honey stores. If they are, and if the ambient temperatures allow, I once again feed them supplemental food.

I also pay close attention to various factors that may lead to a need for supplemental pollen. For example, has it been a warm winter allowing them to raise more brood earlier than normal? How did their pollen stores look in the fall? Are flowers providing pollen blooming in my area? Do I see many bees with full pollen baskets coming in? Depending on my assessment, I may also provide my bees a synthetic pollen substitute. You can add these questions to your spring beehive inspection checklist.

You'll also need to feed bees when they are installed in a new apiary hive. Honey bees produce wax with specialized glands on their abdomen. These tiny sheets of wax are used to build the comb their hive is built out of. Beeswax is a very expensive commodity. That is, bees need a lot of carbohydrates to produce wax. On average, for every 10 pounds of honey a colony produces, they can only produce one pound of beeswax. In a new hive, on new equipment, bees have to build a lot of wax comb. As long as they are building comb, you should be supplementing them with carbohydrate-laden sugar water. The general rule of thumb I use for feeding new bees is this: My new colonies get supplemental sugar water until they have built comb in both deep brood boxes.

HOW I Feed My Honey Bees

SUGAR WATER

When my honey bees need a boost in their honey stores, I provide it through a heavy dose of sugar water. My go-to is 1 part sugar to 1 part water by volume with a little bit of Honey B Healthy for added measure. I'll feed this mixture in fall or spring.

I typically buy a 1-gallon jug of drinking water which I empty (usually into my belly!). I then fill it halfway with granulated white sugar (do not use any other type of sugar!) and then top it off with hot water from the tap. I have found the hot water from my sink is plenty hot enough to mix and dissolve the sugar. To this mixture, I add about a teaspoon of Honey B Healthy.

This mixture is placed in a hive-top feeder. I like this style of feeder as I can refill it easily without actually opening the hive. There are several other feeder types,



and most work quite well.

As long as the daytime temperatures are above freezing, I'll continue feeding as long as the bees will take the food and until I feel the hive is heavy enough.

FONDANT

I have never used it, but some beekeepers also have success with fondant. Fondant is essentially sugar candy placed inside the hive over winter. As the bees cluster, they create warmth and condensation, which slowly softens the fondant, allowing them a readily accessible supplemental source of carbohydrates.

POLLEN SUBSTITUTE

When I feel my bees need a boost of protein in the situations I mentioned above, I'll offer them a pollen substitute. Please note, these are not actual pollen patties (though some do have a small amount of real pollen in them), so the bees do not always use them. Having said that, most are of good quality and can really boost a colony when used at the right time.

When I feed a pollen patty, I typically place it on the top bars of the top box in my Langstroth beehive. This leaves the patty between the top box and the inner cover.

I quickly learned that feeding my honey bees isn't such an odd thing after all. In fact, it can be the thing that keeps them alive through a tough winter or an odd spring. 🍯

JOSH VAISMAN is an avid beekeeper and instructor in Northern Colorado. An active member of the Northern Colorado Beekeepers Association, Josh has been involved in the education of new beekeepers on behalf of the association and privately. Like most people who study apiculture, Josh started into beekeeping as a hobby, and offers valuable experience to those wanting to start beekeeping about the learning curve involved, what to do, and what not to do when getting started. When not tending to his hives, Josh is a Positive Change Ninja with Flourish Veterinary Consulting, a company he co-founded to apply the science of well-being to the veterinary workplace. He lives in Firestone, Colorado with his wife, Greta.

Balance Your Chicken's Diet at all Ages



BY REBECCA SANDERSON

WE KNOW THAT LAYING hens need more calcium in their diet than chickens that are not laying eggs, but how much more? Chickens need different feed at various times in their lives and also according to gender, but what do you do when you have a mixed flock? How important is it that your chickens get the correct proportions of nutrients in their feed?

What Chicks Need

When your chicks are less than eight weeks old, they need a starter feed. This starter feed is higher in protein than any other chicken feed mixes, usually possessing 18-22% protein by weight depending on variety and often the area where

you live. This feed is also low in calcium because excess calcium can cause deformations in the chicks' growing bones and damage the kidneys even to the point of killing the chicks. The young growing

oats and cornmeal (even with no protein) than to feed layer rations even for a day. The high amount of protein in the chick starter feed is imperative to growing healthy feathers because feathers are made

of protein. Chick starter is also ground into much smaller pieces than feed for grown chickens, making it easier for the chicks to digest.

What Growing Chickens Need

Once your chickens are eight weeks old but not yet laying, they need a grower ration. This ration has less protein but still

does not have the extra calcium needed for egg formation. The protein amounts for grower feed is usually 14-18% by weight. Most

The young growing chicks are so sensitive to the amount of calcium in their diet that in an emergency, it is better to feed them pulverized scratch or ground oats and cornmeal (even with no protein) than to feed layer rations even for a day.

chicks are so sensitive to the amount of calcium in their diet that in an emergency, it is better to feed them pulverized scratch or ground

chickens will need this feed until 20-22 weeks of age, when they are ready to lay their first egg. Some larger breeds that start laying at an earlier age will need to be switched by 18 weeks of age. When young, the quality and balance of their diet affect the quality of the eggs they will lay later on.

What Laying Hens Need

As soon as a hen reaches the laying age, she needs to have appropriate calcium in her diet, usually 2.5-3.5% of the feed by weight. If her calcium is not adequate, she will draw the calcium for laying eggs from her own bones, thereby weakening them. Low calcium will result in eggs with thin, brittle shells that may even break inside your hen as she tries to lay the egg. This usually results in her death as she can no longer pass the egg. Brittle and broken feathers can also indicate a need for more calcium. As your hens age, they will need more calcium in their diet. You can supplement calcium by giving oyster shell, limestone, aragonite, or soluble calcium grit. A cost-saving method is to recycle eggshells. Completely wash and dry eggshells, then crush them, so they are unrecognizable to the hens. This is so you don't give them the idea of egg eating. Calcium supplementation in this form is an excellent way to give calcium to your laying hens when you have a mixed flock, as they will eat what they need. Protein needs are at 16-18% of feed by weight.

What Roosters Need

Roosters do not need any additional calcium and don't even need as much protein as laying hens do; only 9%. If you are able to give separate feeds, you may mix your regular feed mix with some scratch grains to decrease the overall protein content for your roosters. If you need to separate feed with chickens that are housed



Roosters do not need any additional calcium and don't even need as much protein as laying hens do; only 9%.

2022 Bird Pre-orders Starting Now! Register at StrombergsChickens.com to receive alerts.

HEALTHY AND HYDRATED

Blue Ribbon Products
HELPING YOU SUCCEED EVERY STEP OF THE WAY

STROMBERG'S WINTER WATER KIT

- Includes Double Wall Fountain with Electric Heater Base
- Keeps water accessible in the coop or enclosure
- Add *Wonder Probiotics* to aid in their health and growth
- Easy to Clean, Sanitary!



THOUSANDS
of products



EXCLUSIVE
online sales



800-720-1134



SIX RETAIL
locations



CUSTOMER SERVICE
for all your needs

If her calcium is not adequate, a hen will draw the calcium for laying eggs from her own bones, thereby weakening them

together, you may decide to give feed at certain times of the day with individual dishes per chicken. This can be accomplished with a smaller flock but is not as feasible with large flocks.

When to Change Rations

You will need to adjust your chickens' feed at certain times, such as the extra calcium supplement for older laying hens. Chickens also need a little higher protein percentage in summer because the heat will cause them to eat less in general. They also need a little extra protein whenever they go through a molt as the new feathers will take a good portion of protein.

Your roosters could use some additional protein during mating season as well. In contrast, wintering chickens need a higher amount of carbohydrates to give them energy for warmth. Adding

protein can be accomplished with some cat kibble or giving some mashed boiled egg yolk. Another method for adding just a little extra protein is giving your chickens some milk separately from their normal feed. Increasing carbohydrates is easily done by adding a small amount of scratch grains to the feed. During winter, scratch grains may be best given right before your chickens go to roost for the night, as it will give them a little extra energy for warmth.

Supplements

Other supplements besides calcium to consider giving separately are grit, phosphorous, or salt. Whether you need grit depends on if your chickens get pasture time and what type of feed you give them. If they have time outside in open grazing, they will

pick up grit themselves, and you do not need to supplement. If they do not have much time away from the coop, but you give them grains (cracked or whole) or seeds, they will need grit to help them digest. Range-fed chickens may not get the phosphorous they need as they are not getting as many insects to eat. They will need it supplemented in a separate dish. Salt may be needed if your chickens are range-fed, even if only part of the time. Chickens that are fed only commercially prepared feeds will not need these supplements as the feed has been carefully balanced. All supplements should be fed in separate dishes or hoppers and made available at all times.

Having unbalanced feed can impact a chicken's laying ability or cause unnecessary weight gain. Extra fat can make it hard for your chickens to lay their eggs, and nutrient deficiencies can cause problems with the eggs. Nutrient deficiencies can also cause problems such as feather picking, egg eating, and cannibalism. We must keep our chickens' feed balanced to their needs. By incorporating the suggestions given here, you can help your chickens be healthy and keep laying well. ©

Works Cited

Damerow, G. (1995). *Storey's Guide to Raising Chickens*. North Adams: Storey Publishing.



REBECCA SANDERSON grew up in a very small town in Idaho with a backyard full of chickens, goats, sometimes sheep and ducks, and other random animals in addition to the cats and dogs. She is now married with two little girls and loves the homesteading life! Her husband is very supportive (tolerant) of her continued experiments in making many items from scratch, and he even helps sometimes.

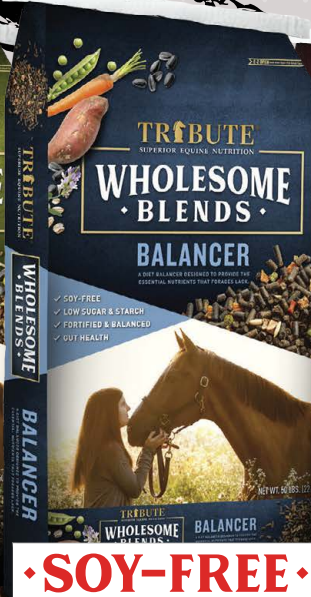
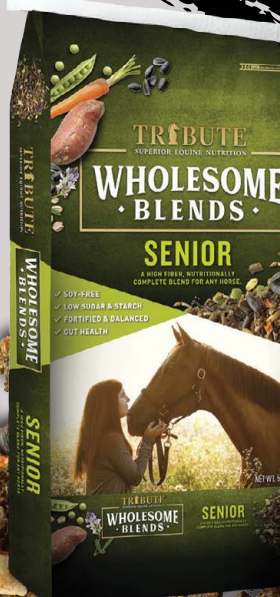


*Extraordinary Nutrition
because they deserve the best!*

AVAILABLE AT YOUR LOCAL DEALER OR ONLINE AT:
kalmbachfeeds.com/where-buy • amazon.com • chewy.com



• SOY-FREE •



• SOY-FREE •



**THE FACTS:**

What is it? A highly contagious bacterial disease.

Causative agent: A rod-shaped, facultative aerobic bacteria called *Salmonella enterica* subspecies *enterica* serovar *Gallinarum* and biovar *Gallinarum* and *Pullorum*.

Incubation period: Four to six days.

Disease duration: Infection can be acute or chronic, with birds carrying the disease into adulthood and passing it to their offspring.

Morbidity: High.

Mortality: Very high in young birds, moderately high in older birds.

Signs: Embryos can die in the egg prior to hatching. Birds exhibit depression, drooping wings, huddling, labored breathing, poor appetite, and have thick white paste-like diarrhea.

Diagnosis: A necropsy examination with culture at a state diagnostic laboratory is necessary to confirm the diagnosis.

Treatment: Not recommended.

THE SCOOP:

Pullorum disease and fowl typhoid are both caused by two strains of the *Salmonella enterica* bacteria. These bacteria affect chickens, turkeys, ducks, geese, quail, guineas, peafowl, pheasants, and various wild birds. These diseases have been virtually eradicated from commercial flocks in most developed countries, but outbreaks in backyard flocks, game birds, and wild birds still happen. Although rare, some mammals such as dogs, pigs, rabbits, and cats can contract these diseases as well.

Birds can contract these diseases either horizontally or vertically. Horizontal transmission occurs from fellow birds in the environment at the same time, and vertical transmission is when bacteria are passed from a hen to her offspring through egg transmission. Lighter breeds are more resistant to these diseases, while heavier breeds are more susceptible.

Horizontally, transmission can occur through the respiratory tract, orally, or through an open wound. The bacteria can be found in the feces of infected birds, so contaminated drinking water or feed is a source of disease. Additionally, birds can contract it through cannibalism or feather picking of infected birds. Bacteria can be mechanically spread through equipment, mammals, wild birds, insects, or owners traveling between farms.

Zoonotic transmission to humans is unlikely but not impossible.

Due to the nature of these diseases, your veterinarian will be mandated to report an outbreak for a positive test result or a suspected infection.

One of the many organ systems affected by these diseases is the ovary, so hens of producing age may lay eggs infected with the bacteria. Zoonotic transmission to humans is unlikely but not impossible. If infected eggs are incubated, chicks will either hatch with the disease or die during development. Even if very few infected chicks hatch, they can soon infect their brood-mates through horizontal transmission.

Clinical signs of pullorum disease are usually seen in chicks less than a month old. Infected chicks will be found dead or dying soon after hatching, with signs peaking around two to three weeks old. Chicks will have symptoms of nonspecific septicemia, including depression, drooping wings, huddling, labored breathing, poor appetite, and thick white paste-like diarrhea. Fecal pasting can be seen as well.

Birds that survive into adulthood will be smaller than average, be poorly feathered, and some of the eggs they lay will hatch and become infected chicks. If an older bird becomes infected with these diseases, it will have fewer presenting signs. Usually, the bird doesn't appear sick other than decreased egg hatchability, decreased production, and reduced fertility.

Fowl typhoid is very similar, with the exception that it affects birds of any age with the same symptoms. Chicks and adults alike will have ruffled feathers, anorexia, weight loss, dehydration, and diarrhea. With both strains of this bacteria, outbreaks can have few or atypical symptoms. Birds will be infected for life, and chronic infections present with weakness, production loss, respiratory problems, and inflamed joints.

Postmortem examinations reveal lesions for both diseases. Pullorum consistently affects the ovary, but almost every organ can develop lesions. Lesions are indistinguishable between the two diseases.



Infected hen's ovary. Copyright: World Organisation for Animal Health (OIE). Extracted from Shivaprasad H.L. (2000). – Fowl typhoid and pullorum disease. Rev. Sci. Tech. Off. Int. Epiz., 19 (2), Fig. 11, page 409. DOI:10.20506/rst.19.2.1222.

Both fowl typhoid and pullorum disease are diagnosed by a veterinarian. Testing must be conducted at a state diagnostic laboratory. The veterinarian will take samples from live or diseased birds, then conduct serological testing or bacterial isolation typing. Due to the nature of these diseases, your veterinarian will be mandated to report an outbreak for a positive test result or a suspected infection to the state's Department of Agriculture.

Any animal suspected of being exposed to the disease will be quarantined and tested depending on local regulations. Positive flocks will be depopulated, and the area will be decontaminated.

Different antibiotics have been used to treat clinical cases of these diseases in the past, but they do not cure the disease, and multidrug resistance is common with *S. enterica* bacteria. Treatment will not prevent birds from passing the disease on to the next generation. The only real treatment is to cull infected birds, disinfect the living area, and prevent future generations from becoming infected.

Disinfection can be difficult with an *S. enterica* infection. The bacteria can live for several months to years in the ambient environment; however, they don't survive in high heat or direct sunlight. Equipment needs to be cleaned with phenol-based disinfectants before use.

Prevention is the only way to protect a flock from these diseases. Since they can be transmitted vertically, it is incredibly important to only buy hatching eggs and chicks from parents that are known to be disease-free. Advocate for your future flocks by asking breeders about the parent bird's health. The *Salmonella* bacteria types are one of the agents tested for by the National Poultry Improvement Plan, so flocks that are NPIP certified are safe to buy stock from.

Biosecurity is always a foundational aspect of keeping poultry safe. Keep wild birds and rodents away from your flock as much as possible. Don't allow visitors if they have sick birds. Clean all equipment before use. Be mindful of all feed, bedding, or other materials brought onto your property. Additionally, certain insects, like poultry mites, are known mechanical vectors, so preventing and treating infestations quickly is a priority. 

All Cooped Up is a collaboration between medical professional Lacey Hughett and poultry specialist at University of Pennsylvania, Dr. Sherrill Davison. Every All Cooped Up publication has been vetted by Dr. Davison.

LACEY HUGHETT is a registered nurse, artist, author, mom, and homesteader based out of Reno, Nevada. She focuses on sustainability, heritage breed preservation, and ethical animal raising. She has been raising poultry since she was six years old. She can be found on Instagram and Facebook at Hughett Heritage Farms.



PREVENTING COCCIDIOSIS IN CHICKENS

What Preventative Coccidiosis Treatment Works Best for Day-old Chicks?

BY JEREMY CHARTIER

COCCIDIOSIS IN CHICKENS has been a legitimate problem for farmers since the dawn of commercial poultry farming, especially in chicks. Unfortunately, it's also a common problem for backyard coops and homesteaders alike. Thankfully, today we have some excellent tools at our disposal to control coccidiosis, and these tools are available to us as small poultry keepers.

Coccidiosis in Chickens

Before you tackle the prospect of coccidiosis in your flock, it's important to understand the challenge at hand. Coccidiosis

is not a virus, nor is it a bacteria. Coccidiosis is a protozoan parasite (microscopic single-cell bug). An infection of coccidiosis in chickens occurs when a bird ingests a sporulated oocyst (an infectious coccidia egg), usually from the ground or coop floor.

What Coccidiosis Does

Coccidia parasites begin to colonize the lining of the gut by infiltrating a single cell in the gut wall. Once inside, these parasites multiply until the cell bursts. When that cell bursts, all the parasites go in search of a new cell. Once the colony establishes itself, it

produces new oocysts that shed from the host bird in the feces. This infectious manure goes on to infect the next bird, or reinfect the host bird.

Sub-Clinical Coccidiosis

Coccidiosis in chickens is somewhat inevitable. Chickens that range outside inevitably ingest coccidia from the wild. Mature chickens will build immunity to coccidiosis, much like your body makes antibodies in response to a virus. A bird who has coccidiosis but shows no apparent signs of illness is considered to have a sub-clinical infection.

Medicated chick feed has long been the standard method of fending off coccidiosis in chickens, and it has a proven track record. Using amprolium in chick feed does not kill the coccidia, but instead starves the population in the gut.

Clinical Coccidiosis

When a flock has a clinical infection, you'll start to see sick chick symptoms such as depression, lethargy, and hunching. Diarrhea and bloody stools are hallmarks of coccidiosis in chickens. These signs are caused by the compounding chain reaction of bursting cells, which breaks down the gut lining and causes gastrointestinal bleeding. Mortality is likely, especially in chicks, mostly due to septicemia (infection of the bloodstream) or hypovolemic shock (bleeding to death). Juvenile birds are far more fragile than adult birds and can't build immunity to coccidiosis quick enough, which is why coccidiosis kills chicks so easily.

How to Prevent Coccidiosis

Coccidiosis in chickens is avoidable. The best prevention is biosecurity in conjunction with inoculation (vaccination) or the use of coccidiostats. Inoculation and coccidiostats are mutually exclusive, however, so pick one or the other.

Biosecurity

First and foremost, you should be buying chicks from an NPIP certified hatchery. These birds are tested and certified to be clean of disease and should arrive sans any infection. Once they're in your barn, if you follow proper biosecurity measures, you can keep them free of contamination.

Some of the standard biosecurity measures such as boot washing as you enter the coop, segregation of differently aged flocks, controlling traffic in and out of your barn, and disinfection of equipment will reduce the likelihood of your flock contracting coccidiosis, or any other disease for that matter.

Litter Management

Don't underestimate the importance of litter management! Wet bedding in poorly ventilated

coops gives coccidiosis the perfect environment to reinfect your flock. Infected chickens shed the coccidia oocysts in their manure, and once those oocysts enter the wet bedding of a coop, they sporulate (transition from non-infectious to infectious). If you keep your litter dry, you can stop oocysts from sporulating in the bedding, breaking the cycle of reinfection.

Inoculation

Many commercial hatcheries now offer coccidiosis vaccine options

Anticoccidiastats and Cocci-Vac® don't play well together. You'll need to pick one or the other, because if you feed coccidiostats to a bird that received Cocci-Vac®, then you'll kill the modified strain of coccidia, defeating the purpose of inoculation altogether.

when ordering chicks. I think the word vaccine is a bit misleading, but not entirely incorrect. Much like we receive weakened versions of viruses (known as a modified-live vaccine), chicks are sprayed at one day old with a solution that contains coccidia oocysts. These oocysts are a weakened version of the wild varieties, just like a modified live-virus vaccine. The most common coccidiosis vaccine available from commercial hatcheries is Cocci-Vac® from Merck Animal Health.



**HATCHING SELECT
STANDARD AND RARE
BREED CHICKS
WEEKLY**

**NOW SHIPPING AS FEW AS 3!
ORDER ONLINE AT**
WWW.MTHEALTHY.COM OR CALL US AT 1-800-451-5603
9839 WINTON RD CINCINNATI, OH 45231
GET 10% OFF WITH CODE: CS10

Est. 1924
MT. HEALTHY
Hatcheries

Weak Strains

Once the chicks start to preen themselves, they ingest these oocysts, and the weakened coccidia do exactly what wild coccidia do, only to a lesser extent. This weak coccidia strain results in a safe, predictable immune response that will give chicks the opportunity to build an immunity, so when they finally encounter wild full-strength coccidia, they have the tools to combat the infection.

Coccidiostats

Medicated chick feed has long been the standard method of fending off coccidiosis in chickens, and it has a proven track record. The medication in these feeds is usually a product called amprolium, which is designed to control coccidiosis. Using amprolium in chick feed does not kill the coccidia, but instead starves the population in the gut. By weakening the population of coccidia, it stops the colony from completing the entire life cycle, slows them down and gives the chick a chance to build immunity.



Medicated Chick Starter

If you opt to use medicated chick feed, you need to use it starting day one and continue it uninterrupted until the feed

manufacturer says to switch. Unfortunately, if you run short of feed and grab a bag on non-medicated feed, you've lost the protection of the coccidiostat, so be sure to keep an extra bag just in case.

Amprolium

Amprolium is the most popular coccidiostat I've seen, but it's not the only one. Additionally, amprolium is also marketed under the name Corid® by Huvepharma. Corid® is used in other species to treat



coccidiosis in goats, cattle and other livestock. Corid® is not approved for use in all livestock, so be sure to talk to a veterinarian before medicating animals with Corid®.

I've never seen a university study on the effectiveness of the apple cider vinegar alternative, and the general opinion of veterinarians and poultry scientists I've asked is "Can't hurt, might help."

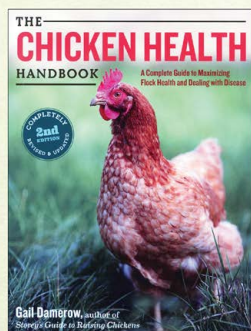
Pick One

Anticoccidiostat and Cocci-Vac® don't play well together. You'll need to pick one or the other, because if you feed coccidiostats to a bird that received Cocci-Vac®, then you'll kill the modified strain of coccidia, defeating the purpose of inoculation altogether.

Natural Alternative

A generally accepted, natural alternative to preventing coccidiosis is adding apple cider vinegar to your chick's water. The theory goes that the vinegar acidifies the water, making the gut an uninviting environment to coccidia. I believe the apple cider part merely is for palatability. I've never seen a university study on the effectiveness of this alternative, and the general opinion of veterinarians and poultry scientists I've asked is "Can't hurt, might help." ©

Guidance on Nutrition, Reproductive Issues, and a Full Range of Health Problems



BY GAIL DAMEROW

A must-have reference for the small flock owner. A complete reference to answer the questions and resolve the problems of any chicken raiser from beginner to professional. Enhanced with full-color photographs and eye-opening illustrations

shop.iamcountryside.com

At 12 years old, **JEREMY CHARTIER** became involved with his local 4-H group, later joined the local FFA chapter, and showed livestock until his college years. After graduating from the Ratcliffe Hicks School of Agriculture at UConn, he joined University of Maine's Poultry Service Provider training program. Today Jeremy sells started pullets to local backyard farmers, is still involved with 4-H as a poultry showmanship judge, and writes about his passion for farming.

Poultry Wound Care

By Rebecca Sanderson

FLOCK
FILES

Be prepared before your chicken gets injured by having both the supplies and knowledge for chicken wound care.



Before Treatment

Wrap your bird gently in an old, clean towel to prevent them from hurting themselves (or you). If your bird is not in serious condition, treating at night may calm them. Take them away from the flock. If the wound bleeds heavily, apply wound powder and light pressure for 10 minutes.

Clean the Wound

Pour or squirt a saline solution into the wound to clean out dirt and debris. Purchase in first aid sections or mix four cups of (cooled) boiled water and two teaspoons of salt (non-iodized, with no anti-caking agents). Use tweezers to grab larger pieces of debris. The foaming action of hydrogen peroxide can lift debris out but is damaging to soft tissues and should only be used as a last resort. Gently dab the wound dry with a gauze pad.

Treat the Wound

To prevent infection, keep a few types of antibacterial products handy. A simple spray such as Blu-Kote disinfects small wounds and colors the area purple to prevent pecking. For larger wounds, povidone-iodine is a broad-spectrum antimicrobial available over the counter. Gently pour iodine on the wound and allow to air dry. You may follow with antibiotic ointment for dry wounds or antimicrobial powder for oozing wounds.

Dress the Wound

For minor feather picking or superficial scratches, Blu-Kote is usually enough covering to aid in healing. If not, clip or pluck away feathers that may get in the wound. If no longer bleeding and where the bird will not peck it, you may leave it open. Otherwise, cover with a gauze pad and tape it around the wound or make a body wrap around the bird to hold the dressing in place.

After Treatment

Keep your bird isolated until it heals. Your healing bird needs rest, warmth, quiet, and no more stress, to avoid shock. Be sure they have adequate food and water.

Treating Infection

Infection is easier to spot if you check under the dressing daily or opt not to use a dressing. An infected wound will be red, may ooze pus or fluid, and the scab may get larger as time passes. If a wound isn't healing within two weeks, assume it is infected. Remove the scab, softening it first by repeatedly applying a thick ointment such as zinc oxide or Ichthammol. This may take a day or even two. Clean out the infection using saline solution and retreat the wound just as before.

Special Considerations

If the wound is from an animal bite, you may need a stronger antibiotic such as Terramycin. Also, if the chicken's wound doesn't stay closed with a simple dressing or is multiple layers deep, it may need stitches. This is best done by a veterinarian or other professional.





Damaged feathers and skin from feather pecking and cannibalism.
Photo credit: Awewewe/Wikimedia Commons CC BY.

CHICKEN MIND HEALTH

Avoiding Behavior Problems

BY TAMSIN COOPER

CHICKENS IN THE WILD HAVE complex interactions with their surroundings and each other, leading to an active and varied experience of the world. Through domestication, they have adapted well to human-made environments. However, some artificial systems test their ability to cope, and this can result in behavior problems. Most issues occur where there are high stocking densities and little opportunity to express natural behavior. Early resolution can prevent issues from spreading through the flock.

Feather pecking is not an aggressive act, but normally due to boredom and lack of foraging opportunities. It can be avoided by providing plenty of fresh dirt, litter, and frequently rotated pasture.

Aggression

Chickens establish a hierarchy to reduce aggression, with subtle warnings and submissive gestures and only occasional pecks or chasing. However, aggressive pecking will resume if unrecognized birds disrupt the flock until a new ranking is settled. Aggressive pecks are sharp downward attacks to the head of the rival. Roosters display to encourage submission before physical contact is necessary. However, dangerous fighting results if mature roosters are introduced.

Social problems can occur if chickens are unable to form a normal hierarchy. This may result from raised flock size or stocking density. Chickens can remember up to about 80 other chickens' identities. So, in larger flocks, they frequently encounter individuals they do not recognize, and fighting may break out.

In confined spaces, lower-ranking individuals may suffer both bullying and loss of access to food, water, roosts, nesting boxes, etc., and may end up losing condition. Overstocking can increase frustration and competition — the pecks may fly — with the alpha hens ruling access to resources. If necessary, reduce stock or enlarge runs and introduce more roosts, hiding places, feeders, and environmental enrichment.

A study identified broiler roosters who injured or killed their mates during mating. These males did not perform the ritual mating dance due to a genetic fault where courtship behavior had been inadvertently bred out. More commonly, young subordinate males may attempt a sneaky mating while the dominant rooster is not looking and neglect the courtship ritual. The hen usually objects and calls to the alpha male to rescue her. I took on a new young male who was subordinate in his previous flock. Initially, he pounced on my hens with no courtship routine. Fortunately, he settled down, started to court, and won the females over.

Finally, aggression may be displayed toward people by roosters that have lost the fear of humans and view them as competitors. This sometimes occurs when cockerels have been hand-raised. A helpful approach is to hold your ground, wave your arms, but otherwise make it clear you are not after his girls.

Feather Pecking and Cannibalism

Chickens sometimes peck the feathers of their companions, mainly around the body, tail, and wings. This is not an aggressive act, but normally due to boredom and lack of foraging opportunities. It can be avoided by providing plenty of fresh dirt, litter, and frequently rotated pasture. Adding scratch grains will keep chickens motivated to forage.

If there is nothing to scratch or the pen is too densely populated, feather pecking can become a habit that spreads throughout the flock because chickens copy each other. Pecking may start gently but persistently,

damaging the feather structure. It may progress to vigorous pulling and removing feathers. This not only hurts but denudes skin and can damage flesh. Red skin and blood naturally draw attention. Instinct urges them to peck at red marks, as chickens find the taste of blood rewarding. Soon many chickens may be pecking at wounds on one bird. This leads to cannibalism — not as a predatory or aggressive act, but as a response to the lure of blood. The result for the victim is catastrophic and often fatal.

A similar effect can occur in the nesting box where the vent of a laying hen is exposed to companions. Curious hens are attracted by the red, shiny vent, and may peck it, causing bleeding. Again, the pecked hen risks being cannibalized. We can avoid exposure of laying hens' vents by making nesting boxes private and dark, setting them apart from communal areas, adding curtains, or raising them above head height, and ensuring that they are large enough.

Too long light periods can cause hyperactivity and an enhanced desire to forage, which can lead to feather pecking if unfulfilled. Take care that artificial light is on no longer than 16 hours. In brooders, use red or dark heat lamps so that chicks can get enough sleep.

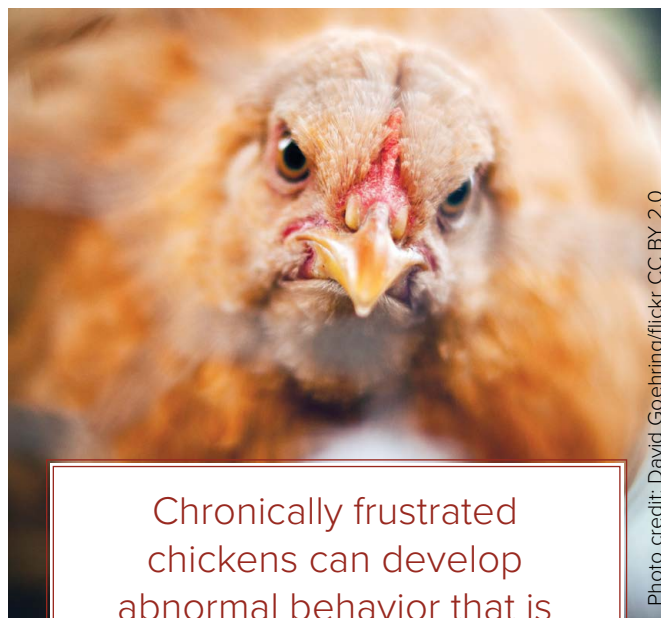
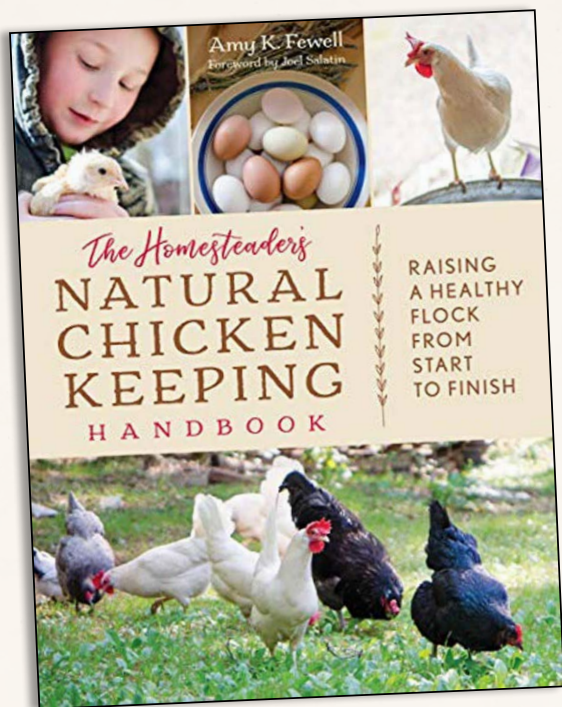


Photo credit: David Goehring/flickr CC BY 2.0

Chronically frustrated chickens can develop abnormal behavior that is rigid, repetitive, and serves no function. These repetitive behaviors indicate that welfare is severely compromised.



A modern homesteader's guide to raising, feeding, breeding, selling, and enjoying the noblest animal on the farm — the chicken.

The Homesteader's Natural Chicken Keeping Handbook

Learn everything you need to know about raising chickens naturally.

shop.iamcountryside.com • 970-392-4419



Deer Run Farm
Heritage Chicken Hatchery

— Emmitsburg, MD —
A quality source for Ameraucana,
Copper Marans, Delaware, Olive
Eggers & Welsummer chicks.

Eggs, Day Old Chicks
& Started Pullets

717-357-4521
DeerRunFarmMD.com



FREE Report

SCAMS EXPOSED! \$15.00 value

Learn the truth about distilled, mineral, tap, spring, filtered, bottled, well, alkalized, reverse osmosis & more...
Which one is best for you?
www.waterwise.com/cty
—or call for **FREE** Report & Catalog

800-874-9028 Ext 721

© 2007-2021 Waterwise Inc

Waterwise Inc • PO Box 494000 • Leesburg FL 34749-4000

☒ **YES!** Please rush my **FREE** (No Cost/No Obligation) Waterwisdom Report about H₂O scams and how to have the very purest drinking water... CTY

Name _____

Address _____

City _____

State _____ Zip _____

Repetitive Behavior

Chronically frustrated chickens can develop abnormal behavior that is rigid, repetitive, and serves no function. A distorted habit develops from useful actions that are thwarted. For example, chickens in a restrictive cage or coop may pace back and forth. Hens with no opportunity to build a nest or nest privately may do likewise, attempting nest-seeking behavior. Chickens with no dust bath may imitate dust-bathing on the floor of their cage. Hens with no access to nesting materials may peck at their drinker, move away, then peck the drinker again, repeatedly. Feed-restricted birds often peck continuously at a single spot. These repetitive behaviors indicate that welfare is severely compromised.

Litter Eating and Excessive Drinking

Litter eating restricts the intake of nutritious food and can block the gut. Artificially-raised chicks may copy each other eating bedding material. You may need to show them what is good to eat, much as a mother hen would. Litter eating can also be a sign of having ingested moldy feed. Feed-restricted broiler breeders may eat litter or drink excessively due to hunger. Wet bedding can then lead to further health issues.



Frustrated hen seeking a quiet place to nest may force her head through bars. Photo credit: Farm Watch/flickr CC BY 2.0.



Floor eggs may get broken and lead to egg eating. Photo credit: Rachel Knopf/Pexels.

Egg Eating

Egg eating normally starts by accident, by an egg breaking and a hen finding a tasty treat inside. Then she might start breaking them intentionally, and other hens will quickly copy her. You need to halt this behavior quickly before it spreads throughout the flock. Blown-out eggs refilled with strong mustard and put back in the nest, golf balls, and artificial eggs can teach them that breaking eggs is no longer worthwhile. Prevention is



Fresh grass turfs enrich the pen and allow natural foraging and scratching behavior.

Egg eating normally starts by accident, by an egg breaking and a hen finding a tasty treat inside.

Then she might start breaking them intentionally, and other hens will quickly copy her.

the best solution by keeping boxes topped up with straw, removing laid eggs frequently, and ensuring that hens have enough protein and minerals in their diet.

Laying Problems

Chickens need a secluded, undisturbed nest to lay efficiently. Competition for a laying box or human disturbance can cause eggs to be laid on the floor and shell abnormalities if laying is delayed. Provide sufficient secluded boxes to give your hens the choice of nesting site.

Providing space, choice, and enrichment that keeps your chickens occupied will help stave off stress and frustration that lead to behavior problems. 🐔

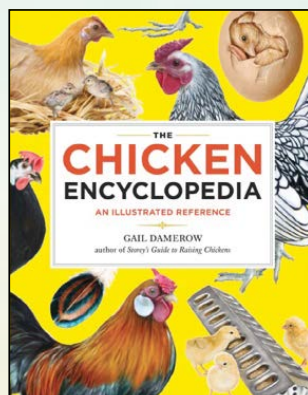
Sources: University of Edinburgh MOOC; Jensen, P. *The Ethology of Domestic Animals*, CABI

TAMSIN COOPER keeps goats and chickens on her smallholding in France, where she aspires to live as sustainably as possible. She follows the latest research on farm animal behavior and has mentored on animal welfare courses.

The Chicken Encyclopedia

Anything you want to know about chickens is either included here or it's probably not worth knowing.

BY GAIL DAMEROW



shop.iamcountryside.com
970-392-4419

Brinsea NEW ChickSafe

ChickSafe Eco and Advance automatic coop door openers... protect your birds when you can't



■ Brinsea have re-designed the coop door opener from scratch. The NEW ChickSafe Eco and Advance patented designs have only one moving part and no mechanical switches for the ultimate rugged reliability and ease of use.

■ A tough two-piece alloy door is also available.



Visit www.brinsea.com
or call 1 888 667 7009 for details

Brinsea Products – bringing innovation to chicken keepers for over 40 years!



Countryside

GIFT IDEA

The Complete Sheep Shoppe

Nice Things in Lamb & Wool

Offering all things wool like a great selection of quality sheepskin slippers and boots.

Many styles and sizes to keep your feet warm and comfortable.

Mens and Womens styles available.



completesheepshoppe.com



PINK EYE IN SHEEP

Treat or Let it Run its Course?

BY JANET GARMAN

DURING SHOW SEASON, pink eye can be a common livestock issue. Small ruminants easily transmit pink eye from one animal to the next. This highly contagious bacteria is more common in spring and summer but can occur at any time of the year. Outbreaks of pink eye can show up after a new animal has been introduced to the flock. Goats and sheep eating from the trough spread the bacteria through direct contact.

Inflammation of the cornea and conjunctiva of the eye is the telltale sign of pink eye. Clinically, pink eye is called infectious keratoconjunctivitis. The bacteria that causes pink eye is one of two bacteria. *Chlamydia psittaci* (ovis) and *Mycoplasma conjunctiva* are the culprits behind most cases of pink eye in sheep. Chlamydia is also the cause of spontaneous abortions in small ruminants.

In addition to close contact with affected animals, stress can

play a part in sheep contracting the bacteria. Moving animals, new surroundings, and extreme weather changes are some ways your small ruminants can experience stress.

It's easy to find these stress factors during show season. Crowded barn conditions can lead to an outbreak of pink eye. Not only is the close contact of the animals a trigger, but the lack of good ventilation and increased dust help transfer the bacteria from one animal to the next. Flies are vectors and can carry the bacteria between animals. Fly control is very important.

What are the Symptoms of Pink Eye in Sheep?

The animal with pink eye will blink frequently. The eyes are more sensitive to any irritant and can be bothered by bright sunlight. You may see the sheep holding its eyes partially, or all the way

closed in bright light. Tearing and wet stain below the eye is often noted. The eye membranes are red and inflamed-looking. An opaque appearance can take over the eye, and temporary or permanent blindness can occur in severe cases.

The Economic Impact of Pink Eye

Pink eye is rarely fatal. Loss of condition can occur if the animal's blindness leads to it not finding enough food. Mostly, the infection is annoying to the animal and may lead to some weight loss. The economic impact occurs mainly from the cost of treating a large flock. Some farmers with large flocks of sheep will choose to use a one-time injection of Tetracycline or treat the water using LA 200 or Tylen. The use of these drugs in the water is an off-label use of the antibiotic. Consult your veterinarian for advice when administering drugs to your flock.

Discuss with your veterinarian what to feed sheep while they are being treated for pink eye.

With smaller flocks, treating pink eye is more feasible. Isolate any animal showing signs of illness or infection. The most common treatments are Vetericyn Ophthalmic Gel and Terramycin Ophthalmic Ointment, which should be administered two to three times a day. Both can be used as preventatives and include no withdrawal time. Begin by cleaning up the area surrounding the eye. Often the wool or fur beneath the eye will be wet or sticky from the irritation. This can attract flies. Keep the area clean by gently bathing the area with a good antiseptic spray. Vetericyn Pink Eye spray can be used for this. Your sheep are not going to appreciate being spritzed in the eye. Grab a gauze pad or clean rag and spray the liquid onto the rag. Then, clean the sheep or goat's face. Vetericyn Pink Eye spray is safe for food-producing animals or animals for human consumption. It doesn't include antibiotics, and animals shouldn't experience ocular irritation or a withdrawal period.

Can the Animals Recover Without Treatment?

Since the disease is considered self-limiting, many animals can recover without treatment. Some short-term resistance has been observed in animals that recover with no treatment. The immunity is not long-lasting in sheep and goats. A New Zealand website noted that early treatment can hasten recovery and limit the spread of pink eye. However, they also noted a higher incidence of reinfection with sheep that were treated versus those animals that went untreated. In any case, proper care is essential to the good health of your flock. Cleaning the eye area when it is wet or sticky can prevent flystrike and other eye issues.



Can Other Livestock Get Pink Eye?

Cattle can also suffer a pink eye infection. The infection in cattle is caused by *Moraxella bovis*. This is a different bacteria than the two responsible for pink eye in sheep. A vaccine is available to prevent an outbreak of cattle pink eye. There is no vaccine available for use in sheep and other small ruminants. The cattle vaccine does not work in other species. Chickens can also have conjunctivitis; *Mycoplasma* is a common cause of chicken eye problems.

Prevention of Pink Eye

Cleanliness is an important factor in battling pink eye. Wear gloves

when examining animals. This lessens the spread of disease. Keep the barn clean and keep dust under control. Fly control is also important in the fight against pink eye.

A closed flock is less likely to have an outbreak of pink eye. Isolate any new animals for at least 30 days. If you show your animals at fairs and competitions, isolate the animals when you return. Animals can be carriers and show no symptoms of pink eye.

Pink eye may not be the most serious disease shepherds have to deal with, but it can be costly to treat. Following good health and herd management practices will lessen the chance of an outbreak in your flock. ©

JANET GARMAN is a farmer, writer, instructor, and fiber artist living in central Maryland on the family's farm. Raising chickens, ducks, sheep, and fiber goats led her to write her most recent books, *50 Do-It-Yourself Projects for Keeping Chickens*, (Skyhorse Publishing 2018), *The Good Living Guide to Raising Sheep and Other Fiber Animals*, (Skyhorse Publishing 2019), and *50 Do-It-Yourself Projects for Keeping Goats* (Skyhorse Publishing 2020).

[instagram.com/timbercreekfarmandhomestead](https://www.instagram.com/timbercreekfarmandhomestead)

[facebook.com/timbercreekfarm](https://www.facebook.com/timbercreekfarm)

[timbercreekfarmer.com](https://www.timbercreekfarmer.com)

Dead Ram Walking

Treating Sick Sheep Symptoms

BY LAURIE BALL-GISCH



So we gave Hoss an antibiotic; we treated him for parasite species outside of the normal realm we usually see here on our farm, including meningeal worm and lungworm (just in case!); and we gave him vitamin shots: B complex, A, D, and E, and also BO-SE®.

Although he wasn't grinding his teeth, we also gave him an anodyne, in case the ram was in pain.

Check with your sheep veterinarian on the possibility of obtaining and using fast-acting pain relief and anti-inflammatory drugs. Some have reported success with items such as Flunixin — trade name Banamine® — a prescription medication with no FDA-established withdrawal/withholding times for sheep. As with any extra-label drug usage or "ELDU," each use of such medications legally requires supervision of a licensed vet.
— Editor.

I put fresh hay and water in his pen, but he showed no interest in eating. We gave him a 60cc oral drench of Gatorade for the sugar energy and electrolytes and hoped for the best.

I checked on him every few hours throughout the day, but no change. He just lay there with his head down and flies swarming him.

At that point, I worried about flystrike because he was so still. Several times a day I kept up with the oral drenches, switching between fresh water and electrolytes. I tried giving him yogurt to restart the rumen, but that didn't help.

Five days in, I was getting frantic. Every time I walked out to check on him, I expected to find a dead ram. I even told my husband it was probably time to dig the hole.

It seemed there was nothing I could do for my ram. It's awfully hard to watch an animal lie there and starve to death. Sometimes we can treat the presenting issue/illness (i.e. parasite overload, pneumonia, etc.), but getting the sick animal to start eating again

ONE DAY THE RAM WAS WALKING around and looking totally healthy — the next day he stood under a tree with his head hanging down. I approached him, hoping he'd lift his head and move away from me, but he didn't. I knew I'd have to examine him.

I looked him in the eye and he just collapsed, as if he'd already given up. My husband Daryl and I had to drag him into a barn stall, as he could no longer walk, and where we could more easily treat and feed him. We went through our usual sick sheep symptoms checklist.

1. Check eye membranes for signs of anemia and hence parasites. Eye membranes were nice and red, but we wormed him anyway, as he'd not been wormed since earlier in the summer.
2. Nasal discharge? No.
3. Coughing? No.
4. Diarrhea? No.

5. Raspy, labored breathing? No. But there was severe lethargy, weakness, and lack of appetite.

6. Injury? Possibly, but no outward signs of bleeding. His ribs didn't feel broken. No swelling anywhere.

What to do for treatment? After all, the ram in question was eight years old and it had been a brutally hot summer. Maybe just old age?

Of course, we wanted to treat him; we always assist an animal as best we can if it's still breathing. But at this point, I braced myself to lose him because he showed no will to live.

So we went with the proverbial "refrigerator" treatment, which means give him everything we have and hope something will help.

We have to be realistic. There are few veterinarians available with experience in small ruminants. And it seems that these situations always arise on weekends when veterinary offices aren't open anyway.

is an entirely different issue. The longer its rumen is empty, the harder it is to get it started again, and the animal can quickly become dehydrated.

Brewing Up A Cure

On day six of my poor ram just lying there — and after having done all that we or our veterinarian could think to do — I decided to give him a beer. I'm not really sure where that idea came from but I knew that restarting the rumen meant introducing healthy microflora. What about yeast? Since the daily spoonfuls of yogurt weren't working, maybe beer might help — and probably wouldn't hurt.

I rummaged through the root cellar and found some beer we used to keep around for Papa Willie before he departed this life.

I walked out the door with the beer, a jar, and a 60cc drenching syringe. My 12-year-old daughter saw me and said "Mom, what are you doing with a beer?" I told her I was going to give it to Hoss and that it might make him better but if it didn't, maybe he'd die happier.

I sat next to Hoss and loaded my syringe: Two ounces of beer at a time (tricky because of the foam). I forced open the side of his mouth, put it over the tongue, and made him swallow. By this time he was so weak he no longer fought me over his daily oral treatments. I gave him the whole can.

The next day he was still alive, and was actually sitting up. I gave him another beer.

The next morning when I went out, he was standing up! I put some fresh hay in front of him and he started to nibble on it. Later that day, he wandered around the large paddock he shared with the alpacas and nibbled at grass.

Dead Ram Walking!

I gave him a third beer on day four of the beer treatment, and from then on he was eating and drinking

on his own! Within two weeks he was strong enough to go back into the rams' pasture. (We knew it was time because he tried to bust down the gates to get in with my Leicester ewes.)

A Beer a Day Keeps the...

We all know the downside to drinking beer, but it helped my ram recover so well.

After his miraculous recovery, I researched the health benefits of beer. I found out that beer was first used as a homeopathic remedy during the time of the Egyptian pharaohs.

I found an article on the *Fox News* website titled "The Surprising Health Benefits of Beer" (<https://www.foxnews.com/health/the-surprising-health-benefits-of-beer>):

"Despite beer's bad reputation, it actually has a number of natural antioxidants and vitamins that can

DE-WORM SHEEP WITH GARLIC JUICE



Read splendid results of deworming sheep. A USDA sponsored S.A.R.E. study shows the tremendous effectiveness of pure garlic juice on sheep. Read the study on our website: www.GarlicBarrier.com.

Total cost for 9 doses during the year is only 98-cents — including all garlic, shipping and handling. Allows 1 dose every 3 weeks for 6 months.

Orders taken on the phone or internet: 1-800-424-7990. Garlic Barrier comes in 2 sizes, gallons and quarts. Do not order the quart size for deworming, only the gallon size is pure garlic juice, quarts are only 10% garlic juice.

GARLIC BARRIER Made exclusively in USA by Garlic Research Labs, Inc., Glendale, California
1-800-424-7990
Fax 818-247-9828
www.garlicbarrier.com

Back in Balance Minerals®

FORMULAS FOR GOATS, SHEEP, HORSES, AND CAMELIDS

A bioavailable line of minerals formulated by herbalist and traditional naturopath Alethea Kenney. Created to improve digestion, growth, health, immune function and reproduction. **Contains no fillers or artificial preservatives, non-GMO.**

Back in Balance Blends:

Herbal Products for Livestocks

For Orders:

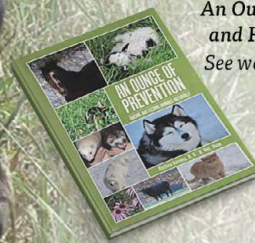
North Central Feed Products, LLC Zena Dunker
70 Alice St., P.O. Box 10 | Gonvick, MN 56644
1-877-487-6040 | ncfpllc@gmail.com
Can ship anywhere in the U.S.

Book Now Available:

An Ounce Of Prevention: Raising and Feeding Animals Naturally
See website for more information.

Alethea Kenney,
B.S., D. Vet. Hom.
Shelvin, MN 56676

218-657-2502
info@borealbalance.com



HEALTHY ANIMALS START WITH GOOD NUTRITION.

www.BackinBalanceMinerals.com

help prevent heart disease and even rebuild muscle. It also has one of the highest energy contents of any food or drink....

"If you're worried about dehydration, keep in mind that beer is 93% water. Also, according to a Spanish study, beer may actually provide better hydration than H₂O alone when you're sweating it out under the sun.

"For health benefits, a dark beer is the better choice. Dark beers tend to have the most antioxidants, which help reverse cellular damage that occurs naturally in the body. A recent study published in the *Journal of the Science of Food and Agriculture* has also found that dark beer has higher iron content compared to lighter beers. Iron is an essential mineral that our bodies need. Iron is a part of all cells and does many jobs including carrying oxygen from our lungs throughout the rest of our bodies.

"Another good choice is microbrews, which are healthier than mass-produced cans, because they have more hops. Hops contain polyphenols, which help lower cholesterol, fight cancer and kill viruses."



Imagine if I'd given Hoss an expensive microbrew instead of an old can of Red White & Blue beer. He'd probably have recovered a couple of days quicker!

Another resource written by Lisa Collier Cool for Yahoo Health, "10 Surprising Health Benefits of Beer," states:

"A Dutch study, performed at the TNO Nutrition and Food Research Institute, found that beer-drinking participants had 30% higher levels of vitamin B in their blood than their non-drinking counterparts, and twice as much as wine drinkers. Beer also contains vitamin B12 and folic acid."

After reading these reports, I decided that beer might be the drench of choice for any sheep that is sick and off feed, with one exception: One that has eaten too much grain. Adding a fermented drink to a grain-poisoned or bloated rumen would not be a good idea.

I also recommend that a smaller-sized sheep (Hoss weighs about 200 pounds) receive less than the 12 ounces I was giving to Hoss.

After getting Hoss back to health, I had several inquiries about treating sick sheep. One friend had a ewe lamb that had gotten highly parasitized and was thin and sick; even though she had been treated with dewormers, she would not eat. I suggested that they try beer after relaying my experience with Hoss's recovery. A few days later, her ewe was up, eating again, and doing very well.

I'm no veterinarian and my experiences treating my sick sheep are purely anecdotal and not scientific in nature. But anybody who has watched an animal nearly starve to death may admit that giving the sheep beer might trump teetotal abstinence if it revives its appetite and buys it time for a real recovery.

As for Hoss, he recovered enough to have his own group of ewes and the clean-up ram that showed none needed to be rebred. Not bad results from a "dead ram walking." ©

Yarn from Your Own Flock!

- 35 lb. min. raw fleece requirement
- Wool & Precious Fiber blends

GREENSPUN & Certified Organic processing

Putney Vermont

800-321-9665 • www.spinnery.com

lauren@spinnery.com

GREEN MOUNTAIN SPINNERY

LAURIE BALL-GISCH came to sheep farming from a background in the arts — with a passion for spinning and weaving. When she was able to leave her house in town to buy a small farm, a former dairy operation, she had no idea that the desire to have a couple of fiber animals would turn into full time shepherding. She had discovered Icelandic sheep, and was completely enamored of their beauty, their hardiness, and their intelligence.

Local Hens[®]

You'll feel better when you know where your food comes from.

Local Hens[®] Featured Farm



Talking Oaks Ranch

We are a small homestead, practicing natural & organic farming to produce quality, homemade products from our family to yours. We specialize in organic rainbow chicken eggs and organic celadon quail eggs. Established in 2015, our family of five moved from the suburbs to the country so the children could learn about raising animals, gardening, composting, rewilding, and appreciate all the hard work that is needed to have a happy and healthy partnership with nature.

Check Out Their Farm Profile: localhens.com/farms/talking-oaks-ranch

Create Your **FREE** Farm
Profile at:
www.localhens.com



SCAN ME



The
Egg Carton Store

MODERN SERVICE & SPEED, OLD WORLD QUALITY & VALUE

FREE SHIPPING ON ALL EGG CARTONS!

(866) 333-1132



• **WHOLESALE PRICING**

• **PALLET ORDERS**

• **QUANTITY DISCOUNTS**

• **CUSTOM CARTONS**

EGGCARTONSTORE.COM



Paper-Pulp | Plastic | Foam | Yard Signs | Filler Flats & Shipping Boxes | Jumbo & Duck | Custom Labels

Sheep Giving Birth

Tips for Successful Lambing

BY LAURIE BALL-GISCH



OVER THE PAST 12 lambing seasons, the main thing I learned is that every season will bring a new lesson. So as I cherish the “lull before the storm” on a quiet, pre-lambing-time evening, I wanted to share some things I’ve learned and items I keep to make spring lambing less hectic.

Maiden Ewes

Every fall, as I evaluate that season’s young ewes, I agonize over whether to put them with a ram. I’ve learned over the years that those “one-winter ewes,” lambing unassisted their first spring, go on to be my most productive. I’ve found productivity and mothering are heritable traits. I have a 12-year-old ewe that bore twin rams unassisted when she was just 11 months of age. She’s gone on to have many sets of twins and triplets over the years. Her grandmother has only produced twins, starting at 11 months of age, and one of her

one-winter daughters produces twins and triplets.

Things can go great, or they can get very, very bad. All seasoned shepherds have at least one horror story of dealing with a first-time sheep giving birth.

Many malpresentations can occur. But avoid overfeeding your does. If you’re pulling too many oversized lambs, then you likely overfed the does in the four to six weeks before gestation.

I use two techniques for pulling lambs, and these are especially helpful if you are alone.

One is to put the sheep on a bale of hay or straw with her feet dangling over the front and back. This anchors her so she can’t run away and gives you gravity to help extricate the lamb. I used this technique one time when pulling a very large breech lamb.

Other times, when the sheep wouldn’t lie down, I got them into a pen, straddled them while facing

their hindquarters, and leaned over to pull the lamb in a downward motion. This only works if the lamb is presenting hooves and a nose — giving you something to pull on.

Another trick is to have the sheep lie on her side and to lift her hind legs into what I call the “diaper position.” By rotating her hips and hind legs upward like that, sometimes it rotates the lamb enough to give more space for release from the birth canal.

For the ewe, the worst part is, of course, being delivered of the lamb. But for the shepherd, sometimes the worst part is after her delivery, if the new mama refuses to be a mother.

They often act so “unmotherly” because they are just plain exhausted. They may have had a long labor and may be sore or even going into shock. After making sure the lamb is alive and gets its colostrum, I make sure the ewe has access to warm molasses water (do not serve cold water to ewes right after they have lambed) and good fresh hay, preferably with some alfalfa or clover mixed in.

This is also a good time to give the ewe a boost of energy with some CMPK gel. You can also administer Gatorade orally to a tired ewe, giving her quick electrolytes. Be sure to have the large 60cc syringes around for times like this, especially if a ewe refuses to drink on her own.

There are little tricks we can use to help a new mom figure out she’s in it for the long haul: When they cannot fathom this creature that is nudging them and poking at their hindquarters and bleating away, it’s usually because something interrupted the natural hormones that normally kick into gear during the entire lambing process. Interruptions can include a difficult and prolonged labor and delivery, the intruding shepherd trying to help save the lamb and her life, and/or the confusion of too many

animals milling around. Try to get these new moms into small, quiet pen areas where they aren't jostled by other animals — rams, lambs, dogs. Sometimes the excitement of other people who want to watch or assist, fouls her instincts.

I instruct all of my family to stay away from the barn during labor or while the ewe is first bonding with their newborns. (Unless I need another person to help me catch or hold a ewe to pull a lamb.)

Sometimes new moms will keep circling, not letting the lamb latch on, either out of curiosity or annoyance. If this happens, hold the ewe's head while the lamb nurses.

One time, a ewe was not talking to, sniffing, or licking her lamb. So while I let the lamb nurse, I turned the ewe's head toward the lamb's rear and made her smell the lamb's rear end the entire time it suckled. I kept at this many times over a several-hour period. After a couple

of hours, the ewe started to lick the lamb's rear and this finally helped her to bond to the newborn. The next time I went into the pen, the ewe stomped her feet at me, and the baby lamb was happily nursing away without my help.

Sometimes we miss seeing a lamb nurse and we worry that it's not getting enough to eat. Full lambs will do a leisurely stretch when they stand up and you can also put your finger into the mouth of the lamb: "Warm" equals "has been nursing!" You'll also feel a nice full, rounded belly if it has been nursing well.

Another time when I could not get a ewe to bond with her lamb, I brought one of my Icelandic sheepdogs into the pen with me. As soon as the ewe saw the dog, her instinct of protection kicked in and she put herself between the dog and the lamb, stomping her feet at the dog. Just that nudge into defensiveness caused her to want

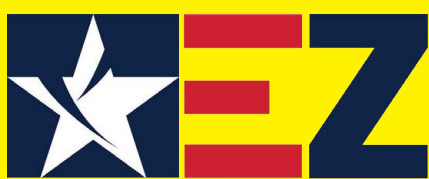


to protect and then bond with that new lamb.

Even more confusing for sheep are twins. They need special monitoring to make sure the ewe is letting both lambs nurse, and that she's producing enough colostrum and milk for two. I now give twins of young ewes an extra boost, using supplemental colostrum, "just in case."

It's also important to confirm





ANIMAL PRODUCTS

ORDER YOURS TODAY!
Visit EZAnimalProducts.com
for demo videos!

*UltimateEz with Stainless Steel Bucket
and Ez Power Pak*



The cow was milked in less than 7 Minutes giving 2.5 gallons with the Ultimate Ez using the 300 Watt Inverter.

Put these on your "BUCKET" list!
Don't forget about our other products, The Udderly Ez Hand Milker and The Stableizer!

"I have been using the Ultimate Ez Electric Milker with the bottles milking from 45 down to 20 does daily without experiencing any problem or negative effects for seven years. We recently added the Stainless Steel 2.6 gallon Bucket so we can milk six at a time. We highly recommend this piece of milking equipment, and best of all it's made in the U.S.A. it's fast, safe, easy to clean with outstanding Customer Service"
- Shery Goodman, Sunspring Ranch, Provo, Utan.



Izzy doesn't like to come to the barn for milking, so we take the Ultimate Ez Milker™ with the 300 watt inverter to her on the Mt. Top. I just tie her up to a Hickory tree and get the job done!"
- Mike Anderson, W.Va..





EZ Animal Products – Buck Wheeler
2524 Pascoli Pl, Lexington, KY 40509
507-213-2126
Toll Free: 800-287-4791

Fisher Manufacturing
706 Red Hill Road
Narvon, PA 17555
717-768-0155

MICHIANA Catalog Sales
12865-2 C.R. 30, Middlebury, IN 46540
574-642-4768
Toll Free: 844-477-3268

BROOKSIDE HARNESS
Harley Helmuth
N4227 Brook Road, Bonduel, WI 54107
715 758 6186

Available on the
App Store

ANDROID APP ON
Google play

whether a young ewe has fully accepted both lambs. One season I had a yearling ewe that gave birth to a white ewe lamb, and 45 minutes later, to a badgerface (tan/brown in coloring) ewe lamb. She got them both out on her own and had them both nursing. About two hours later when I checked on them, she was butting the second-born lamb away and not letting her nurse at all. She had decided her firstborn was her only lamb and no amount of coercion on my part would get her to accept that second lamb. I'm not sure why she decided she would only keep one, after having such a good start.

Geriatric Ewes

I treasure my old ewes, especially those born here on the farm. These nine, 10, 11, and 12-year-olds are the ones that are resistant to parasites and common sheep illnesses; they produce lambs unassisted and raise healthy, hardy lambs every season; they're smart enough not to kill themselves through stupidity. Theirs are the lambs I want to keep — and should be the lambs my customers want to buy — because they have a proven history, a true legacy. But as ewes age, their milk

production goes down. I found this out the hard way when two of my 11-year-old ewes had twins. There was enough milk for both lambs at the beginning, but by the time they were about three weeks old, the ewes couldn't keep up with the demand. So I now pen up geriatric moms with their lambs and immediately supplement their lambs with a bottle from birth onward.

It's actually quite fun to be "snuggled in" with an old friend and her new lambs and to be able to cuddle and hold newborns, offering one a bottle while the other nurses from its dam. Then I switch and make sure both lambs can nurse from bottle and teat. The great part is that the dam still makes milk and she can give the lambs enough milk to get them through a cold night. I don't have to be out there every couple of hours, as with orphaned lambs. These lambs grow up knowing how to be sheep, and you can be as hands-on or hands-off as you want to be. Quickly the lambs know you provide extra calories, so you don't need to keep them penned up much past a few days. The little ones will come running for their supplemental bottles and

then go bouncing back to follow mom.

I house yearling ewes and their lambs —along with geriatric ewes and their lambs —in a barn/paddock/field area separated from the rest of the flock. This way I can grain-supplement moms and newborns for extra calories and protein. This also allows me to move away from bottle supplementation earlier, since the lambs learn to eat the grain alongside their dams. This is also where I keep any ewes with triplets or quads.

Helpful Lambing Goods

Over the years I've found some amazing products that are time and lifesavers when it comes to spring lambing. So every winter I take stock of what I have here and what I need to order.

Vaccinations

First item on the agenda is *Clostridium perfringens*, type D and C. tetani (CD/T) vaccinations. We make a point of administering the yearly boosters (2cc) to each sheep on the farm in March (or at least two weeks before the first lambs are expected). This also includes vaccinating any llamas, alpacas, or goats.

CMPK Gel

I keep this on hand year-round, having found it to be a lifesaver of ewes at risk of pregnancy toxemia or ketosis. It's also great for sheep that have experienced a difficult delivery, especially if she is "shocky." The CMPK is a dairy cattle product that has concentrated calcium, magnesium, phosphorus, and potassium.

I give the ewe 20 to 40cc orally and repeat this every few hours depending on her condition. This is much easier on shepherd and ewe than administering propylene glycol. Two years ago, I found one of my 10-year-old ewes lying



down and not getting up when I approached her; I tried to make her stand and she couldn't. I suspected pregnancy toxemia and immediately gave her CMPK gel. I also got her some warm molasses water and put her in a pen to keep her quiet and easily accessible. She refused to stand that whole day, so I went out every three to four hours to give her about 30cc of CMPK gel and also 60 to 120cc of warm molasses water, as I couldn't get her to drink on her own. I also gave her injections of B complex and vitamins A, D, and E. I left good alfalfa hay in her stall but she did not show any interest in eating that entire day. The next morning when I went out to check on her, she was not in her stall. I found her at the hay feeder eating along with the other ewes. She went on to have triplets for me two weeks later. She had tripleted the year before and had twins the following year at age 11.

Iodine

I have iodine on hand for sterilizing and drying up the umbilical cord. Personally, I don't "strip" the cord or cut it, as some recommend. Whatever is there, I gather up into a small vial of iodine.

NurseMate ASAP®

This is a tube of concentrated colostrum, which can be stored at room temperature. I always keep a tube in my jacket pocket during lambing season. You snip the tip off the tube when a lamb needs extra help — i.e., has been through a protracted birth, is born weak, and not able to get up and nurse right away on its own. What's so great about this product is that you can easily insert the tip of the tube into the lamb's mouth and slowly administer onto the back of the tongue. (Always use latex gloves when touching newborn lambs!) I usually stroke the neck of the lamb as well to make sure it is

swallowing. This is much quicker and easier than running into the house to thaw colostrum and much less invasive than tubing the lamb. It allows the lamb the time it needs to gain its strength on its own without losing more body heat. I give a lamb a half-tube to begin with and finish the tube after about 30-45 minutes if the lamb is still weak and not nursing on its own.

BO-SE®

All of our lambs receive ½ cc injections of BO-SE® (selenium and vitamin E) the day they are born. We also give them a second injection of one cc at six weeks of age when they receive their first of two CD/T vaccinations. You do need to purchase this product from a veterinarian.

Editor's note: Consult with a local veterinarian regarding whether you live in a selenium-deficient area, as selenium overdose can be deadly.

Deworm The Ewe

While I let my ewes choose their own spots for birthing, I move moms and newborns into barn pens after the lambs are up and nursing. This allows me to observe the new family to make sure lambs are nursing well and that the ewe has passed the placenta. This is also when I deworm the ewe. Labor and delivery cause dormant internal parasites to reactivate and it's better that she drop those parasites in a bed of straw in the barn than out on our pastures. Also, be sure to really watch yearling mothers for parasites that spring and summer.

World Class Fencing at Affordable Prices



www.powerflexfence.com



**Permanent & Portable Fencing
and Livestock Watering Supplies**
Order on-line 24/7 or call for FREE Catalog
417-741-1230

They are still growing while feeding one or two lambs, so their immune systems may be compromised and they may need to be dewormed more often than older ewes.

Lamb Milk Replacer

Sheep milk or goat milk are healthier for lambs than any formula mixed up in a laboratory. But if you do not have “real” milk for bottle lambs, I think the best milk replacer is the Shepherd’s Choice brand. I keep a 25 lb. bag of this on hand “just in case.” The lambs grow out well and don’t get a distended belly which I often see in bottle lambs on other farms.

Canned Goat Milk

A couple of years ago my daughter and I got a few dairy goats. When I was too busy to keep up with my cheese production this past spring, a friend suggested I should can the milk to save for bottle lambs or kids. I saved up enough milk over a couple of days to fill seven quart jars. I now have a cupboard full of canned milk ready to open and warm in case we have any bottle lambs this next season. It was actually quite easy and quick to can the milk and may save a lot of money over purchasing the milk replacer.

Pritchard Teat Nipples

I like the Pritchard Teat nipples because it’s easy for small lambs to nurse from them. Even better, they screw onto a plastic pop bottle! We’ve found that the bottle needs at least three threads in order to be secure without leaking. As the nipples don’t come with a hole, don’t forget to cut off the tip!

Molasses

Offer warm molasses water to the ewe after delivery of each lamb. Ewes who have difficult deliveries appreciate this quick energy. It also

seems to help in a quicker expulsion of the placenta. Many only drink it after all lambs have been delivered. To make molasses water, add about $\frac{1}{4}$ cup of molasses to two gallons of warm water.



Because the water container for ewes with new lambs should be tall enough to prevent lambs from falling in, I use five-gallon buckets with handles. I take an empty bucket into the house and put $\frac{1}{2}$ cup of molasses in the bottom. Then I run very hot water on top of the molasses to dissolve it, and I fill the bucket about $\frac{1}{2}$ full of hot water. I take the bucket out to the barn and finish topping it off there. I have “tennis elbow” after so many years of lugging heavy water buckets, so I now carry the less-full buckets as far as I can before I fill them up. The cold water from the hydrant then cools down the hot tap water.

Latex Gloves

We keep a box of latex gloves in the barn and always put them on when handling any newborn lamb or when assisting in any births. We believe it’s very important not to imprint other scents on the lamb while handling it, as not to confuse the new mom. Ewes learn the identity of their own lambs through

smell, sight, and sound. We found it easier to keep the box of gloves in the barn and I also keep several pair stuffed in my coat pockets. Be sure to dispose of these gloves after use.

Weigh The Lambs

I long ago invested in a hanging scale and sling for weighing newborn lambs. I keep a notebook handy and always weigh newborn lambs after they are safely on their feet and have had milk.

Also, if I have triplets, I weigh them again within a week of birth to monitor how well they’re doing. It’s more effective to intervene early if a lamb starts to lag behind its siblings than to wait until it’s older.

We reweigh our lambs at six weeks of age and again at 12 weeks. The six-week

weigh-in tells me how well the lambs are gaining on their dam’s milk (you can figure out a daily rate of weight gain with some math calculation). The 12th week weigh-in tells me how well the lamb is gaining as it is weaning off milk and converting its grazing into nutrition as its rumen develops. It’s not unusual to see the daily rate of gain drop from six to 12 weeks of age as the lamb begins to convert its food through rumination.

Trust Yourself; Learn From Your Sheep

We all make mistakes. The key is to learn from those mistakes and listen to the experience. Every loss is a lesson that helps us to save a future lamb. Each bad experience, no matter the outcome, makes us better shepherds and makes our flock healthier and stronger.

This lambing season, and every future lambing season on your farm and mine, I wish that we’ll only find healthy ewes and lambs greeting us at each new sunrise. 🐑

Pomona's Apple Pie Jam



Apple Ingredients

- 3–4 lbs of apples (9–12 medium apples)
- $\frac{1}{4}$ cup – $\frac{1}{2}$ cup water

Jam Ingredients

- 4 cups of cooked apple sauce
- 2 tsp calcium water
- $\frac{1}{4}$ cup lemon juice
- $\frac{1}{2}$ tsp cinnamon
- $\frac{1}{4}$ tsp nutmeg
- $\frac{1}{4}$ tsp allspice
- $\frac{1}{2}$ cup – 1 cup honey
or $\frac{3}{4}$ cup – 2 cups sugar
- 2 tsp Pomona's Pectin powder

Before You Begin

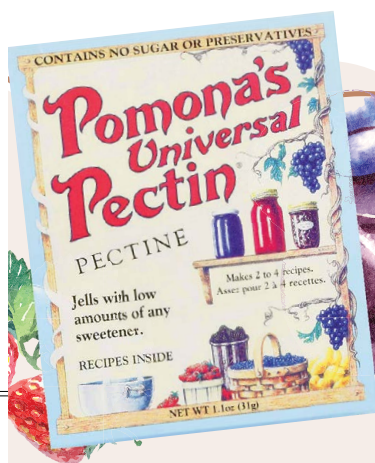
Prepare apples — Peel, core, and chop apples and put in a sauce pan with the water. Bring to a simmer and simmer covered, stirring and mashing occasionally, until you have chunky or smooth apple sauce. Remove from heat and measure out 4 cups of apple sauce.

Prepare calcium water — To do this, combine $\frac{1}{2}$ teaspoon calcium powder (in the small packet in your box of Pomona's pectin) with $\frac{1}{2}$ cup water in a small, clear jar with a lid. Shake well. Calcium water should be stored in the refrigerator for future use.

Directions

- 1 Wash jars, lids, and bands. Place jars in canner, fill canner $\frac{2}{3}$ full with water, bring to a boil.
- 2 Put measured amount of apple sauce into sauce pan.
- 3 Add calcium water, lemon juice, and spices, and mix well.
- 4 Measure sugar or room temperature honey into a bowl. Thoroughly mix pectin powder into sweetener. Set aside.
- 5 Bring fruit mixture to a full boil. Add pectin-sweetener mixture, stirring vigorously for 1 to 2 minutes to dissolve the pectin while the jam comes back up to a boil. Once the jam returns to a full boil, remove it from the heat.
- 6 Fill hot jars to $\frac{1}{4}$ " of top. Wipe rims clean. Screw on 2-piece lids. Put filled jars in boiling water to cover. Boil 10 minutes (add 1 minute more for every 1,000 ft. above sea level). Remove from water. Let jars cool. Check seals; lids should be sucked down. Eat within 1 year. Lasts 3 weeks once opened.

Option: Feel free to use whatever spice mix you would normally use to make apple pie. Spices should not exceed 1 teaspoon. If you leave out all of the spices, you will have plain Apple Jam, delicious in its own right.



Pure, high-quality pectin for your jamming needs.

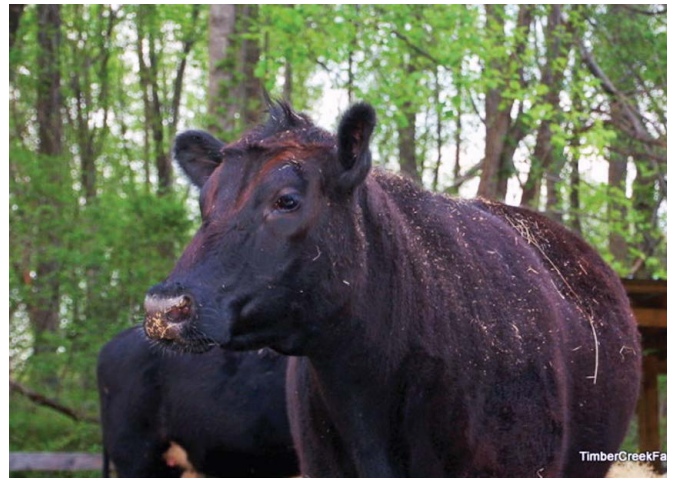
Find your nearest retailer and more recipes at

WWW.POMONAPECTIN.COM

How to Treat Foot Rot

in Cattle, Goats, and Sheep

BY JANET GARMAN



THRUSH AND AN OVERGROWTH of yeast are often behind a case of foot rot in cattle and other livestock. Foot rot needs to be taken care of as soon as possible. Sheep foot rot can happen if the sheep are pastured in muddy fields. Standing in mud while grazing leads to the perfect conditions for foot rot. Goats kept in areas where they have no dry spot to stand often get thrush. The hooves have a distinctive, unpleasant odor. The animal may become lame from the inflammation caused by bacteria and yeast. Even poultry can suffer from an illness relating to thrush and yeast overgrowth. Since we cannot control the weather, and many of us cannot add dry pasture land during the rainy season, how do we treat and care for animals with foot rot?

How Hoof Rot Begins

Take a look at how the hoof rot occurs. Bacteria and fungi need a few things in order to flourish. Warm, moist conditions are the favorite of fungi. The particular fungus most often seen in cases of foot rot in cattle is *Chrysosporium spp.*

The initial problem can be caused by wet conditions or foot injury. This leads to lameness and pain. Bacteria

gain entry and cause further problems and lead the way for fungi to cause thrush, a smelly, irritating condition in hoof rot.

Signs of Hoof Rot

In cattle, the back claw portion of the hoof is often involved. Also, inflammation can be seen between the two sides of the cloven hoof. It is extremely painful for the animal to walk on, and the cow will start to bear weight on different parts of the hoof. This leads to more lameness.

How to Treat

The most often used remedy for foot rot is copper sulfate foot baths. It should be noted that thrush is one of the highest causes of economic loss for the cattle industry. Animals that are in pain do not eat well, convert feed into meat as well, or breed as well as healthy animals.

Hoof Rot in Sheep, Goats, and Horses

Just as with foot rot in cattle, other ruminants can suffer too. Sheep hoof rot and sheep illnesses resulting from hoof rot need to be addressed immediately.

Proper and frequent hoof trimming does help control the conditions in which yeast thrive. The organisms most likely to cause hoof rot in sheep and goats are *Fusobacterium necrophorum* and *Dichelobacter nodosus*. Certain times of the year when moist, wet ground is likely, give the organisms just the right conditions to grow. An overgrowth of bacterial hoof rot then invites yeast organisms to also flourish. A small irritation between the digits of the hoof is all that is needed for the organism to gain entry and cause disease.

How to Recognize and Treat Hoof Rot

The animal will exhibit lameness as a sign of hoof rot. If you are doing routine hoof trimming, you may notice a reaction from touching the tender spots. Sometimes the hoof rot area is hiding between the digits of the hoof. It looks like a red, irritated scrape and is tender. The animal may pull away and act very agitated when being treated.

As with foot rot in cattle, treatment is often copper sulfate foot baths. In addition to using copper sulfate or the commercial product known as Thrush Buster, I will also spray the irritated tissue with an antibacterial wound spray.

Hoof rot in horses is less serious, although horses do need to be treated for thrush infections as soon as possible. The organism causing thrush in horses is *Spherophorus neophorus*. Thrush in horses is primarily seen on the area referred to as the "frog" on the underside of the horse's hoof. This horse hoof problem needs to be treated so that the hoof does not deteriorate. Lameness, limping, and tenderness are signs that need to be checked. Your farrier can offer helpful treatment options and perform more frequent trims to keep the problem from recurring. The stalls should be kept dry and free from urine and feces buildup. A diluted bleach solution is sometimes used to treat the thrush infection. Essential oil users have told me that they use a diluted solution of tea tree oil to treat thrush. In any cases of alternative treatment, consult your veterinarian.

Thrush and Yeast in Poultry

Thrush caused by yeast and bacterial infections is not limited to animals with hooves. Controlling yeast and bacteria during wet rainy seasons is important to many species on the farm. Last winter, we had a challenge from a yeast infection in our chickens resulting from the cold, wet conditions followed by warm, wet, and muddy conditions. Two of our hens exhibited sick chicken symptoms, and we discovered they had contracted sour crop, which led to yeast growth in their throats. The yeast spores can accumulate in the throat and

Thrush caused by yeast and bacterial infections is not limited to animals with hooves.



cause blockage. Removing the yeast growth manually using tweezers was the vet's recommendation. Finally, I had the vet come out to the farm to see what I was dealing with. I was told that the yeast was forming a membrane that was keeping the hens from swallowing any food or water. As soon as I would clear their throats, the membrane would regrow, again closing off the esophagus. While the vet did prescribe an oral medication, the treatment did not work. The hens were lost. Thankfully, it was not a contagious strain that could be passed among the flock. We covered the ground as best we could with dry wood chips. This was the only time we have ever seen this phenomenon occur, and it was quite time-consuming and sad.

Can Problems Like This be Prevented?

Keeping your animals strong with good nutrition and optimal living conditions are the best ways to prevent infections leading to hoof rot and yeast infections. Feeding garlic and herbs to poultry and adding raw apple cider vinegar (one tablespoon to one gallon) to the poultry waterers helps keep their immune systems strong and less attractive to bacteria and fungi. Treat all irritations in the hoof area quickly and improve the conditions as best you can to prevent foot rot in cattle and other ruminants. 🌿



Giving Cattle Injections Safely and Effectively

BY HEATHER SMITH THOMAS

CATTLE INJECTIONS are often necessary — vaccines, antibiotics, injectable vitamins, treating cattle scours, etc. These should always be administered properly to be effective, minimize residues in the meat if the animal will be butchered later, minimize injection site lesions and reduce the risks for adverse reactions.

READ LABELS — Always read labels when using injectable products, to know whether they are meant to be given intramuscularly (IM), subcutaneously (SubQ), or intravenously (IV). Before attempting to give an IV injection, have your veterinarian show you how.

The label will also indicate proper dosage. Vaccines are generally a 2 or 5cc dose. The dose for a particular vaccine will be the same for every animal, whereas dose for an antibiotic will vary depending on the size/weight of the animal.

NEEDLES — Select the proper needle for the job. The length will be different when giving intramuscular injections versus subcutaneous injections and can also vary depending on your technique. When tenting the skin to slip the needle underneath, you'll want a longer needle than you'd use on a syringe gun that's aimed at an angle into the hide. Use a larger-diameter needle for thick fluid that won't go readily through a smaller needle. A large-diameter needle (no smaller than 16 gauge) is also best for mature cattle with thick hides (less apt to bend or break the needle) and a smaller needle (such as 18 gauge) for calves with thinner skin.

If you are vaccinating multiple animals, change needles after every 10 animals. One way to remember to do this would be to change needles every time you refill a multi-dose syringe. If you have a 20cc syringe gun and it's a 2cc dose, it's easy to just change needles the next time you fill it.

Always use a new sterile needle to draw out vaccine (or any other product) so you don't contaminate the contents of the bottle. Needles can become dull quickly. If you put a needle through the rubber top of a vaccine bottle, put a new needle on your syringe before you inject the next animal. Going through the

rubber is harder on a needle than going through a cow's skin. It will put a small curl on the tip of the needle. A dull needle causes more pain and damages more tissue. Use a separate needle for filling the syringe, then change to a new needle for vaccinating the cows.

If you had to inject through a dirty hide, or the needle bends or gets blunted by accidental contact with the chute, change needles immediately. It doesn't take much to put a burr on the end of the needle. Some burrs are so tiny you can't see them with the naked eye. One way to check a needle to see if it's still sharp — without a blunted tip or burr — is to run the backside of the needle across the back of your hand. If you feel anything at all, it has a burr on the tip.

If a needle gets bent, don't straighten it; a bent needle is weaker and more likely to break. If a needle breaks off in the animal and you can't find it and remove it, you cannot legally sell that animal.



GIVING INTRAMUSCULAR INJECTIONS —

When using a trigger-type syringe for IM shots, thrust the needle into the muscle and pull the trigger. When using a smaller or disposable syringe, detach the needle and press your



hand firmly against the skin to desensitize the site so the animal won't jump when you insert the needle. Then thrust it in quickly and forcefully. A new, sharp needle goes in easier and causes less pain and damage than a dull one. If the animal jumps, wait until she settles down before attaching the syringe to the inserted needle to give the injection. If the needle starts to ooze blood, take it out and try a different spot. Never inject intramuscular products into a blood vessel. To reduce leakage, keep the needle inserted for at least two seconds after the injection before removing it from the muscle.

Another way to prevent leakage is to pull the skin taut across the injection site with one hand while you inject with the other, then release the skin after you remove the needle. The skin then moves over the hole and closes it. You can also rub the injection site briefly to help distribute the product within the muscle and reduce pressure, so it's less apt to ooze back out.

SUBCUTANEOUS INJECTIONS —

Most cattle injections today are given subcutaneously. Originally, SubQ injections were used if a

particular product was irritating to muscle tissue or designed for a slower rate of absorption. Today, due to concerns about carcass quality (avoiding IM shots, where possible) more injectables are approved for subcutaneous use. When you have a choice, according to label directions, inject under the skin rather than into the muscle. IM shots are more likely to develop serious abscesses if a needle is dirty. Infection introduced by a SubQ shot is merely beneath the skin, and an abscess more readily breaks open to drain.

For a SubQ injection, lift a fold of skin on the neck or shoulder where the skin is loosest, and slip the needle in between skin and muscle. If using a trigger-type syringe, aim it alongside the animal so the needle goes under the skin and not into the muscle. For a small calf, it may be easiest to give a SubQ injection under the loose skin of the shoulder, and if there's a local reaction, it won't make his neck sore (which may hinder nursing).

Giving injections SubQ rather than IM allows you to use a shorter needle ($\frac{3}{4}$ inch if using a trigger type syringe, or up to one inch if using both hands to tent the skin

and slip the needle underneath) so it's less likely to bend or break. In the confined space of some chutes, insert the needle at an angle so you can use a one-handed technique with a syringe gun, rather than both hands to tent the skin. There's less risk of getting your hand jammed between the animal and the chute or accidentally hitting yourself with the needle.

RESTRAINT AND CLEANLINESS

— Make sure cattle are adequately restrained/secured before you give

injections. There's more chance of leakage/inadequate doses or bending a needle (creating more tissue damage) if the animal moves while you are injecting, putting an injection into the wrong location, or getting your hand caught between cattle in a runway. It's best to restrain each one individually and do it carefully and accurately, rather than being in a hurry.

If cattle are dirty or the neck is covered with manure, wipe it off. In an alleyway, some animals stick their head under the one in

front of them and get covered with fresh manure. Sometimes you can just move to the other side of the neck and find a cleaner area. Occasionally, however, the animal is so dirty on both sides that even if you wipe off the manure, you'd be injecting into a wet, dirty hide. In this situation, wash the area and then dry it as best you can (then change needles before the next cow). If that's not possible, you could inject into a cleaner area like under the loose hide over the ribs behind the elbow — in the girth area.

INJECTION SITES

IM and SubQ injections should be given in the triangular mass of muscle on the side of the neck. The acceptable area starts about three fingers' width behind the ear, extending down to a few inches in front of the shoulder, staying away from the top of the neck (which contains a thick ligament) and the bottom of the neck where the windpipe, esophagus, and jugular vein are located. An alternative choice for SubQ injections, especially on small calves, is the area of relatively loose skin behind the shoulder blade.

When giving multiple injections to the same animal, make sure you have at least four inches of space between them on the neck. That way, there won't be as much chance for the two products to run together under the skin. If one of them is a modified-live virus vaccine and the other one is a killed product, the ingredients in the killed product could inactivate the modified-live vaccine, and it won't be effective.

If a large IM dose must be given and there's not enough area on the neck to absorb all the injections (since the product must be split into multiple sites no closer than four inches apart if the total dose is more than 10cc, to have adequate tissue to absorb the medication), an alternative site is the back of the thigh.

Most shots should be put into the neck to avoid injecting into areas that will become important cuts of meat. Any scarred or damaged tissue can be more readily trimmed from the neck at slaughter. If there's scar tissue (gristle) in the neck, it's not as critical since the neck muscle is usually made into hamburger.

The rump is not acceptable for cattle injections, even though the thicker muscles are better for absorbing a large injection. Many types of injections occasionally create scars or an abscess, which would damage the best cuts of meat if put into the rump. It's better to put IM injections into the neck, splitting a large dose into two or more sites if necessary. If an animal needs multiple injections or repeat treatment, vary the injection sites on subsequent cattle injections.

SYRINGES — Use a syringe of the proper size for the dose. Make sure a multi-dose syringe is giving an accurate dose each time. If it's a big syringe and a small dose such as 2cc, is it actually injecting the full 2ccs, or is it off a little? For smaller increments, you might want to use a smaller syringe that might be more accurate or make sure the larger syringe is giving the correct amount.

If you are giving each animal more than one injection, make sure you put the same vaccine in the same syringe when you refill them. Mark the syringes or put color-coded tape on them, so you never make a mistake. ©

HEATHER SMITH THOMAS

ranches with her husband near Salmon, Idaho, raising cattle and a few horses. She has a B.A. in English and history. She has raised and trained horses for 50 years and has been writing freelance articles and books nearly that long, publishing 20 books and more than 9,000 articles for horse and livestock publications. Find Heather online at heathersmiththomas.blogspot.com.



Backyard Beekeeping

**JOIN A COMMUNITY OF PASSIONATE
BEEKEEPERS, LIKE YOU!**

MEMBERSHIP INCLUDES:

***BACKYARD BEEKEEPING* MAGAZINE (DIGITAL)**

LIVE CHAT WITH EXPERTS

HIVE HIGHLIGHTS

DIGITAL BACK ISSUES

10% OFF BEEKEEPING BOOKS

SPECIAL PARTNER DISCOUNTS



**DIGITAL PLUS
ALSO INCLUDES:**
ANNUAL ANTHOLOGY (PRINT)
**LIFE IS BETTER WITH BEES
TOTE & STICKER**
***BEEKEEPING THROUGH
THE SEASONS* (PRINT)**

BACKYARDBEEKEEPING.IAMCOUNTRYSIDE.COM/ALL-MEMBERSHIP

WATERING CATTLE IN WINTER

BY HEATHER SMITH THOMAS



WATERING CATTLE IN WINTER is crucial. During cold weather, ranchers need to pay attention to water sources to make sure they don't freeze. If cattle don't drink enough, they won't eat enough and they'll lose weight. In some instances, they may become dehydrated and impacted. If contents of one of the smaller stomachs become dry and impacted, feed won't move through. The tract is thus blocked and unless this situation is relieved, the cow will die. Signs that cattle aren't drinking enough include loss of appetite, weight loss, and lack of gut fill. Manure will be scanty and very firm.

A moderate size pregnant cow needs about six gallons of water daily in cool weather, and twice that much after she calves and is producing milk. The temperature of drinking water should be at least 40 degrees or higher, if possible. If water is colder, cows may not drink enough. Cold water that's close

to freezing may cause temporary paralysis of the digestive tract and the cow will stop eating for a while, even though she needs a high energy intake to maintain body temperature and heat the cold water in the gut. Sometimes money spent on a tank heater for watering cattle in winter can save a lot of dollars on feed and health costs.

Snow can be used as a water source under certain conditions if your region gets adequate winter snowfall and the snow stays powdery and not crusted. Cattle must be able to sweep it up with their tongues.

People used to think that cows eating snow in cold weather require more feed energy to warm it to body temperature, but research trials — with some cattle eating snow and some drinking water — showed no difference in feed intake or weight gains. The cattle using snow for moisture just ate slower. They'd eat awhile then lick snow, eat some more, and lick snow. They consume small amounts of snow all

through the day, whereas animals using water will drink just once or twice a day in cold weather. The intermittent eating and snow consumption seems to minimize thermal stress. Heat created by digestion is enough to warm the melted snow to body temperature.

It was also thought that cows deprived of adequate water and having to eat snow would be at risk for impaction, but this isn't true. As long as cows are able to eat snow, they have enough moisture for proper gut function. Impaction occurs mainly when cows do not have enough water or snow, or when they must utilize coarse, dry forage with low protein levels — not enough protein to nourish the microbes that ferment and digest the roughage. Then the feed moves through the tract too slowly, the cow eats less total feed, and she may become impacted.

Eating snow is a learned behavior, however. Cattle learn by watching other cows eat snow. Those with no role models may go thirsty awhile before trying it. If snow is readily available and cattle learn to use it, they can do very well on winter pastures without water, as long as the snow is adequate but not so deep that it covers the forage.

For 43 years we've used a 320-acre mountain pasture for open range ranching our beef cattle, letting cows graze it in the fall after we bring them home from the range and wean their calves. They are usually able to stay there until November or late December — whenever the snow gets too deep for grazing. We installed several water troughs to collect spring water. These work nicely unless weather gets severely cold and troughs freeze over. In cold weather, we'd hike up there every day to break the ice. The cows would follow us to the troughs and gang around to drink after we chopped out the ice. But we noticed that some cows never seemed interested

in coming to water. We'd see them licking snow and worried that they were not getting enough water.

After seeing them do this for several weeks, we realize those particular cows were staying in

good body condition and were not suffering from water shortage. They had learned how to eat snow and seemed to prefer periodic snow-licking, rather than tanking up on ice-cold water in the cold weather. 



ALL AMERICAN®

PRESSURE COOKERS/CANNERS

SELF PRESERVATION
FOR YOUR GENERATION AND THE NEXT

Designed & Manufactured
IN THE U.S.A. SINCE 1930

Visit

www.allamerican1930.com

to find an online retailer
or call us direct at **920-682-8627**

VetRx
RESPIRATORY AID

goodwinol@what-wire.com
Toll Free: 800-554-1080
goodwinol.com

Respiratory illness can spread at a rapid rate ... don't wait until it's too late!



VetRx for Goats and Sheep
is 100% All-Natural and
is used to promote healthy
upper respiratory function.

May also be used to keep
ears clean and clear.





Preventing and Treating Cattle Scours in Calves

BY HEATHER SMITH THOMAS

THE MOST COMMON ILLNESS in young calves is cattle scours (diarrhea). There are many causes, including intestinal infection because of bacteria, viruses, or protozoa. Whether calves get sick depends on multiple factors such as exposure to pathogens, poor immunity, and/or stress. Good weather, clean ground, and stress reduction — shelter from bad weather and minimizing confinement — helps reduce the incidence of cattle scours.

Prevention

There are two important strategies in scours prevention — helping the calf become more resistant to the pathogens and trying to reduce the number of pathogens the calf is exposed to that cause cattle scours.

Boosting immunity starts with adequate colostrum for newborns. There must be a high level of antibodies in the cow's colostrum, and the calf must suckle enough

colostrum, very quickly after birth, to be adequately protected. Pregnant cows can be vaccinated for common pathogens that cause cattle scours. If vaccinated a few weeks before they start calving, the antibody level in their colostrum will be highest. For viral diarrheas like rotavirus and coronavirus, and for *E. coli* bacteria (all of which tend to affect calves early in life), the vaccines work fairly well. Calves are then protected if they ingest enough colostrum soon after birth.

Make sure the cow is in good body condition before calving, so she can produce the best colostrum. If cows are too thin, they don't produce adequate colostrum. As a rule, first-calf heifers' colostrum is never quite as good because they haven't had as much chance to become exposed to as many things or build as strong immunity as an older cow.

Many people think vaccination can prevent all problems, but it should just be the icing on the cake after other good management strategies. There are many reasons a cow's immune system might not respond to vaccines, and this is why body condition is important. A healthy animal in good condition can more readily mount a good immune response. Also, the calf must obtain colostrum quickly to get the necessary immunity. Calves born to thin cows may not be strong and slower to get up and nurse.

Even if you vaccinate the cow so she produces protective colostrum, this has no benefit if the calf can't or doesn't nurse enough or soon enough. The tricky question is whether calves got enough colostrum soon enough. This varies, depending on exposure to pathogens. If cattle are out on grass, it may not matter so much.

If you need to give a calf colostrum (if he can't nurse for some reason), it should be as much colostrum as possible and as fast as possible. This means about six pints in the first six hours (preferably within one to two hours of birth) and another six pints in the following six hours. You can use frozen colostrum or some from another cow or milked from the calf's own mother. The second best is a commercial colostrum replacer.

Preventing exposure is the other part of the battle, making sure the calving area is as clean as possible. You don't want cows in a wet, sloppy environment where they have manure all over their teats. It's always a race between pathogens and the antibodies in colostrum, regarding which gets to the gut first. If the calf is trying to suckle a dirty cow, nuzzling her brisket or flank or a dirty teat before he latches on, pathogens get a head start in this race.

Calve in a different area than where you wintered the cows. A new cattle pasture will be cleaner, with less contamination. There are various strategies, such as the Sand Hills system, where people keep moving the herd to clean ground. You move the cows to a clean calving

area just before calving, then keep moving the ones that haven't calved — every two weeks — to new pasture, away from the ones that have already calved. Then there's no manure buildup or calf scours in the new area. If you can keep the youngest calves from being exposed to older calves that may have already been sick, you prevent problems.

If you are still feeding hay and using bale feeders, move them frequently so that cows aren't standing in manure. Moving feeders or changing the location of your feed-ground every day can help keep cows and udders clean.

Cattle scours outbreaks are usually because of heavy loads of contamination. Calves may become sick even if cows were vaccinated and calves obtained colostrum. If the weather is bad and calving areas are muddy and dirty, the pathogen level may be so high that the calf's immunities are overwhelmed.

Some diseases like coccidiosis, salmonella, or cryptosporidiosis can't be prevented by a vaccine. Keeping calving areas clean, and preventing exposure to manure or animals that may shed these pathogens, are the main ways to protect calves. When tubing sick calves, clean and disinfect equipment between calves. Shelter and bedding are also important to reduce stress and keep calves clean and dry. If you use shelters, keep the bedding clean, and move shelters frequently to clean areas.

Treating Scours

If a calf gets sick, treat early. A calf will recover much faster if you can treat him before he is dehydrated and weak. Giving fluids is crucial, no matter what the cause of diarrhea. Dehydration is generally what kills a calf that dies from cattle scours. If you can give enough fluids to prevent or reverse dehydration, the calf stays stronger and is more able to fight off the infection.

If cattle scours occurs in the first week of life, antibiotics may be needed, since it's likely because of bacteria. If calves are older, it's common to have scours caused by a virus or a parasite such as cryptosporidia. When calves are three weeks old or older, it might be coccidiosis. With these causes, antibiotics do no good, and fluids are the best treatment.

It won't help to just give

pills or boluses. A dehydrated calf won't benefit from those; he mainly needs fluid and electrolytes. If calves can stay with their mothers and continue nursing occasionally, this will be adequate to provide energy. If he's weak and not nursing, use an electrolyte product that contains energy.

Most labels recommend giving electrolytes twice a day. That may be fine in some situations, but if a calf has severe diarrhea and is losing a lot of fluid and electrolytes (especially a very young calf), it's better to give fluid/electrolytes four times per day, every six hours. Give fluid by tube; electrolytes don't taste good, and the calf will refuse to suckle if you try to bottle-feed fluid — especially a calf that isn't feeling well and off feed anyway.

Sick calves may be helped by anti-inflammatory medication. If a calf is miserable and you want to keep him nursing, a non-steroidal anti-inflammatory drug like Banamine can help. It only takes a small dose for a young calf. This can help him feel well enough to keep nursing and not become so weak and dehydrated, recovering faster, with fewer treatments. Some types of diarrhea are more painful than others. With certain types of enterotoxemia (toxin-forming bacterial infection in the intestine), calves may have acute gut cramping, and pain relief can be a huge factor. Pain medication may also help a calf with coccidiosis if he's constantly straining because of the irritated intestine and rectum.

Discuss treatments with your local veterinarian on a case-by-case basis.

Oral or IV Fluids?

Oral fluids, given often enough, can reverse dehydration unless the calf has gone past the point where he can absorb fluids through the gut. If he becomes too dehydrated, the gut shuts down. A rule of thumb: if the calf can still stand and walk, give oral fluids. If he is too weak to get up, has poor suckle reflex, and can't raise his head, he needs an IV. At that point, he is going into shock; he's lost so much body fluid that blood volume is low. The gut can't absorb fluids because the body is trying to get blood to vital organs instead. You won't save the calf without an IV; take him to your vet immediately.

Signs of serious dehydration include lethargy and weakness, sunken eyes, and cold extremities. If the calf is gaunt and eyes are sunken, he probably needs IV fluids. If the calf is not responsive, becoming weak and cold, he definitely needs an IV. 🏥

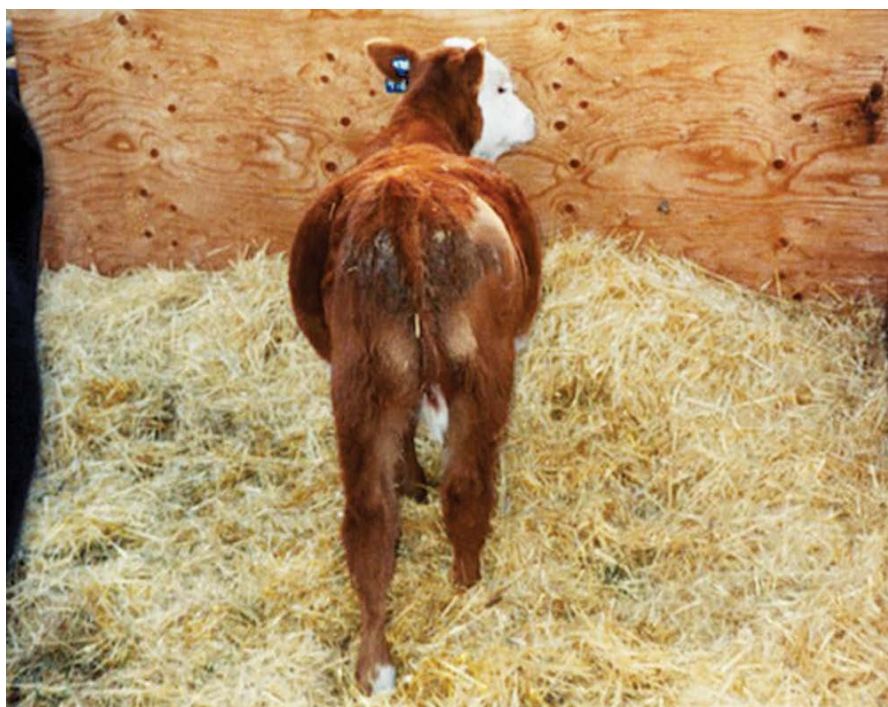
If a calf gets sick, treat early. A calf will recover much faster if you can treat him before he is dehydrated and weak.



HOW TO TREAT COLICKY CALF BLOAT

A Toxin-forming Gut Infection Causes Bloat in Calves

BY HEATHER SMITH THOMAS



Bloated calf.

A calf stretched out showing the discomfort he's experiencing, trying to relieve the gas pains.

Vaccinating cows ahead of calving with *C. perfringens* type C & D toxoid (to produce antibodies which the calf obtains via colostrum), or vaccinating calves at birth or soon after can protect them against this deadly disease.

Yet even with vaccination, some herds continue to have problems, losing calves to a similar type of toxin-forming bacterial infection. It's not *C. perfringens* type C or D (because vaccination, and/or treatment with C & D antitoxin in acute cases, will not prevent or alleviate this disease). This problem can also be caused by type A, which is not included in seven or eight-way clostridial vaccines.

Sometimes other bacteria are involved, such as *C. difficile* (another *clostridia* subtype) or *E. coli*. These bacterial toxins are potent poisons. The challenging thing with toxic gut infection is that it can kill calves within a few hours. A calf may be fine one evening and dead the next morning, or healthy in the morning and kicking/thrashing and going into shock by afternoon. These calves can be saved, however, if discovered in time and treated quickly — before they go into shock — even if you don't know the exact cause of infection.

Prevention

All calves should be vaccinated soon after birth with C & D toxoid or the seven or eight-way clostridial vaccine unless the cows were vaccinated prior to calving (to produce antibodies in their colostrum). If calves continue to have problems, you may need to try a vaccine for *C. perfringens* type A.

It's also important to have calves in a clean environment, but sometimes this is difficult. Some years, especially wet ones, seem to be worse than others. Calves stay healthier if the ground is dry

SOME CALVES DEVELOP CALF BLOAT, an acute enterotoxemia (toxic gut infection) caused by bacterial toxins. These calves are usually about a month old but may be as young as a few days of age or as old as two to three months. They are generally healthy, fast-growing calves that suddenly experience severe gut pain — kicking at their belly (sometimes running frantically, trying to get away from the pain), throwing themselves to the ground and thrashing, like a colicky horse.

They may stagger and collapse.

Or, the calf may suddenly become dull and bloated, not wanting to move. The proliferating bacteria damage the gut and it shuts down, causing a sudden buildup of gas and pain. If the calf is not treated immediately, toxins leak through the damaged gut wall into the bloodstream, creating septicemia (toxins throughout the body start attacking various body organs). The calf goes into shock and soon dies — unless this condition can be reversed by appropriate treatment.

instead of wet and muddy — with dirty udders and calves drinking from mud puddles or eating dirt/mud that might contain bacteria.

Clostridial bacteria are nearly everywhere and are hardy. Some of them are common inhabitants of the intestine and only cause disease when conditions are right. The clostridia that cause disease in calves are already in the environment, in the cow's digestive tract, and the calf's gut. They can be shed in feces and picked up whenever calves ingest contaminated feed, water, mud, etc. Under certain conditions, these bacteria multiply exponentially in the gut and the calf is shedding them into the environment. You might start a calving season with no problems and then suddenly have several cases.

Antibodies calves obtain from colostrum are gone by six to eight weeks of age. This is why calves need to be vaccinated with an eight-way vaccine within the first month or two of life. This will prevent infections caused by types C & D, but won't protect against other kinds of toxin-forming bacteria not included in the vaccine.

No two years are the same. You may think you have a problem resolved with vaccine and management, only to have a problem the next year. The lower incidence of cases a certain year might have been because it was drier. Pastures that had cattle in the past are still contaminated; the "bugs" can be there a long time in the soil. Close monitoring of calves, to notice any cases early on, gives you a chance to treat them before they go into shock or you find them dead.

Treatment

If a calf can be treated at first signs of acute gut pain or calf bloat, there is a good chance of saving him. The infection can be halted with the proper antibiotic, and the shutdown gut can be stimulated

with castor oil to start moving again. Once the toxins get into the bloodstream, however, the calf quickly goes into shock and internal organs begin to shut down. At that point, it's more challenging to save the calf.

If you suspect *Clostridium perfringens* type C or D is the cause, you can give antitoxin — either orally or by IV. You can also give Banamine to help reduce the inflammatory reaction and ease the pain.

Penicillin is effective against clostridial organisms and is most

effective for this disease if given orally, into the gut. Oral doses of neomycin sulfate solution also work. Castor oil can get those toxins out of the gut. Castor oil works better than mineral oil, because you don't need as much volume (a plus if the calf is already bloated and full) and also stimulates the gut to move. Mineral oil merely lubricates. The usual dose of castor oil is two to three ounces for a small calf and up to five or six ounces for a three-month-old calf. Castor oil may help save him by absorbing some of the toxins and stimulating the shut-



ABOVE: A calf stretched out showing the discomfort he's experiencing, trying to relieve the gas pains.



LEFT: Giving a calf castor oil by forcing it into the stomach via the nasogastric tube with a big syringe.

BELOW: Nasogastric tube.



down gut to move things through.

Once the calf is in shock, the only chance for saving him is to give large amounts of IV fluids, along with medication to combat shock. If you can reverse this condition before vital organs are shut down or seriously damaged, the calf may survive. If internal organs have shut down, you are too late. If you can reverse shock and get enough fluid into the circulatory system to get kidneys working, passing urine, the calf has a chance.

Using a Nasogastric Tube

If you know how to tube feed a calf, then using a nasogastric

tube is nothing new to you. To administer castor oil, use a flexible tube about four-feet long and a quarter-inch in diameter. This is better than an esophageal feeder when treating a calf bloat; it goes clear into the rumen and can let gas come back out the tube before you give the oil.

Castor oil is thick and won't run down the tube so you need a large (140cc) syringe to force the warm oil (mixed with a little warm water) down the tube.

In cold weather, put the tube in a thermos jug of warm water until use, to keep the tube warm and flexible so it won't get stiff,

then blow any water out of it just before you insert the tube into the calf. Restrain the calf by backing him into a corner and holding his head/neck between your legs. Tuck his nose toward his chest before inserting the tube. If his head pointed up or stretched forward, the tube is likely to go into the windpipe instead of the esophagus. Put the smoothed end into one nostril, quickly — before the calf sees it coming and resists by clamping the inner part of his nostril shut. If he clamps the nostril, it will be difficult to insert the tube and may also bloody his nose. Push the tube quickly to the back of the throat and then go gently and slowly so the calf can swallow it. He must swallow it before it can enter the esophagus. If he fails to swallow, it will go into his windpipe instead.

Make sure the tube is swallowed. Don't administer any fluid or oil until you are sure it's in the right place, or you risk drowning the calf. If the calf coughs as you try to put the tube down, this usually means it's in his windpipe. Take it out and start over. If it goes down easily with no resistance and it goes in at least two feet or more in a small calf, it's in the stomach. It can't go that far in the windpipe; that passage branches into smaller bronchial tubes.

Check to make sure it's in the stomach by blowing on your end. If you hear burbling noises or smell stomach gas coming out, it's in the stomach. If blowing makes the calf cough, it's in the windpipe and you must take it out.

Once you are sure it's in the stomach, use a big syringe to force down the castor oil. Shake up four to six ounces of oil with an equal amount of very warm water (in a small jar) and suck the mixture up into your syringe. If you keep the castor oil warm enough it will go down the tube more readily than if it's cold and thick. ©

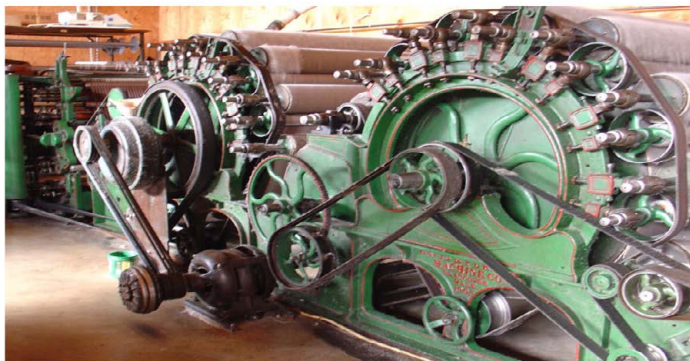


Blackberry Ridge Woolen Mill, LLC

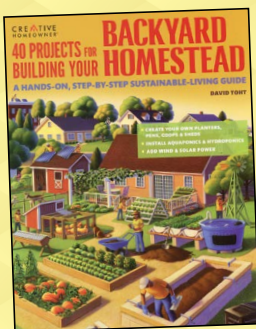
www.blackberry-ridge.com

3776 Forshaug Road, Mt Horeb, WI 53572

**For Sale
Business
and
Farmette
608 437-3762**



40 Projects for Building Your Backyard Homestead



Hands-On, Step-By-Step Sustainable-Living Guide

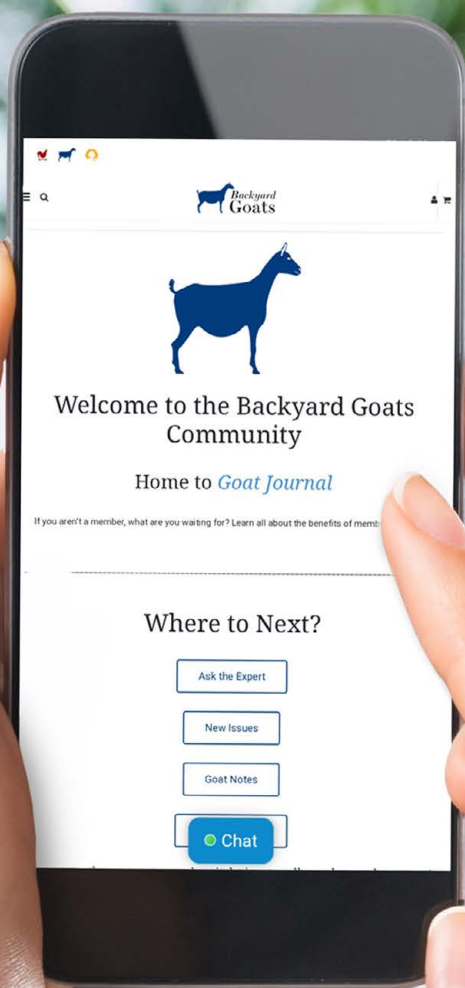
- Create Your Own Planters, Pens, Coops, & Sheds
- Install Aquaponics & Hydroponics
- Add Wind & Solar Power

Visit: shop.iamcountryside.com

YOU'RE INVITED!

JOIN A COMMUNITY FOR ALL THINGS GOAT

HOME TO
GOAT JOURNAL



MEMBERSHIP INCLUDES:

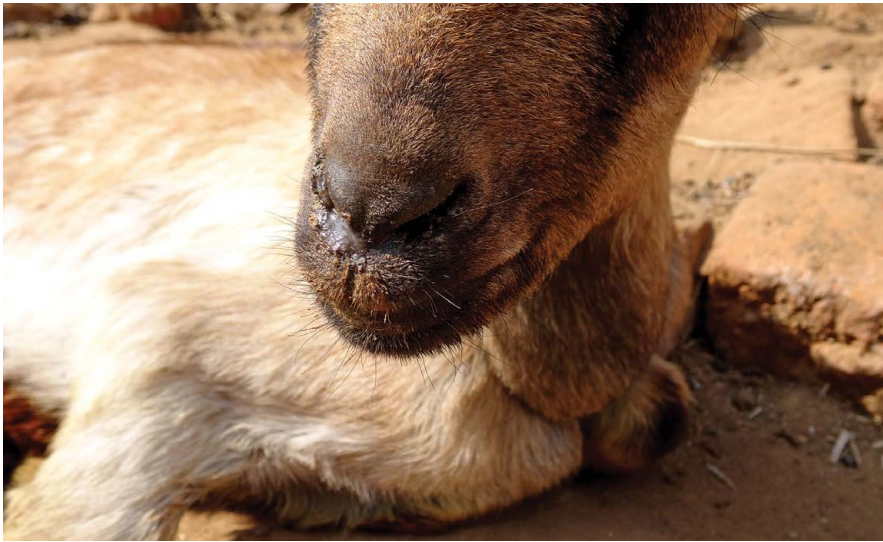
GOAT JOURNAL (PRINT & DIGITAL)
LIVE CHAT WITH EXPERTS
GOAT NOTES TEACHING AIDS
DIGITAL BACK ISSUES
IN-DEPTH GOAT GUIDES
FREE SHIPPING
AND MORE!

BACKYARDGOATS.IAMCOUNTRYSIDE.COM/ALL-MEMBERSHIP

GOAT SYMPTOMS YOU SHOULD NEVER IGNORE

Paying Attention to Normal Goat Temperature and More

BY KATHERINE DROVDAHL MH CA CR CEIT DIPHIR QTP



LEARNING TO NOTICE goat symptoms is a science and an art. The science part comes to things that are quantitative, such as normal goat temperature. Other things come more into an art such as your favorite doe just giving you a look that isn't normal for her. Those that learn to read goat symptoms will be able to catch things early, when the task of turning them back around to wellness is more likely to succeed with less time and resources than

goat symptoms that are missed or not caught for several hours. Here are some common things that I watch for when I go out to my herd.

If I notice a goat that is "off feed" or picking at their hay or grain, I start running questions through my head. Did she consume something toxic or get bit or stung? Is there a fever indicating infection or illness or is she hypothermic? Is something broken or bruised or causing pain? Is it metabolic such as pregnancy toxemia or ketosis?

A goat that is "off" will often show other symptoms. Is he moping around or lying down with his head and ears low? Is he not interested in life around him? Is he crying or unusually silent? This is a great time to take some vitals. If you contact your veterinarian, having vitals to give them will often speed up getting a diagnosis.

Normal goat temperature generally ranges from about 101.5 to 103.5 degrees F. Younger animals and hot days will tend toward the upper end of that range, whilst mature animals and cold days will tend toward the lower part of the range. If it's a hot or hot/humid fall day and I have a doeling that gives me a goat temperature of 101.5, I'll definitely be thinking hypothermic! In the same way, a mature goat that temps at 103 or 103.5 in the dead of winter is going to have me thinking fever (unless they were just playing or bouncing around), even though both of these are within the "acceptable range" as far as science goes. Of course, temperatures out of that range get my immediate attention. Other vitals to note are caprine heart rates being approximately 70-90 beats per minute and respirations (rise and fall of the ribs for a cycle of breathing) is 10-30 per minute for mature stock and 20-40 per minute for young stock.

Another symptom that has me on immediate alert is finding a goat hunched over or arched at the loin/lower back area. This indication of

Normal goat temperature generally ranges from about 101.5 to 103.5 degrees F. Younger animals and hot days will tend toward the upper end of that range, whilst mature animals and cold days will tend toward the lower part of the range.

pain could be a stomachache from ingesting something toxic or an ulcer (uncommon). It could be a kidney issue, a lower back injury, or a bladder infection or urinary calculi, among other things. The arched back indicates pain to that lower region. If you are not confident at sleuthing through goat symptoms, it is always okay to hire your veterinarian. Your observation skills will grow as you get more time "under your belt."

Diarrhea is never to be ignored. Several but not all sources of this could be disease, feeding milk replacers, coccidia or other parasites, bacteria, quick

feed changes, or overeating on something causing acidosis or enterotoxemia. Getting into something toxic to the goat, including moldy feeds, also causes the runs. Diarrhea that is ignored

Diarrhea that is ignored will frequently give you a dead goat. Before calling for help, noting color and consistency, blood, or no blood will give important information.

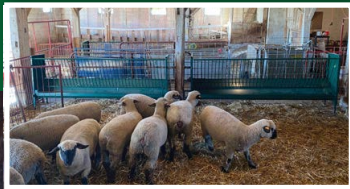
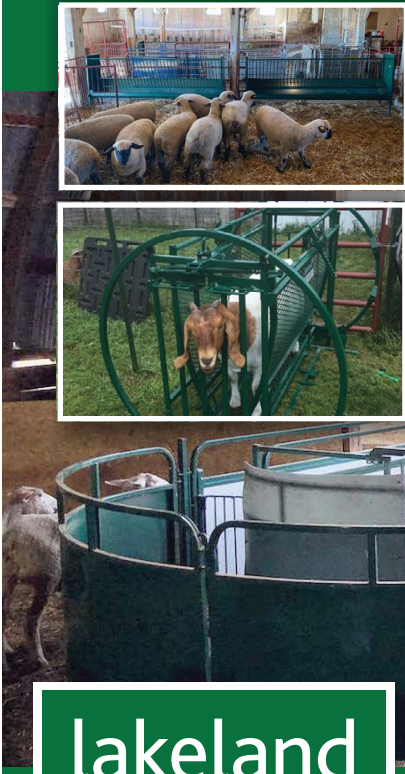
will frequently give you a dead goat. Before calling for help, noting color and consistency, blood, or no blood will give important information.

Bloat often goes with diarrhea and some of its causes. Bloat can

also come on when a ruminant is lying on its side for too long. Bloat of the rumen is another emergency not to get to "later." Later may be too late.

"Hack, hack, hack." There are dry coughs which can often be allergies, dust inhalation, or chronic leftover problems from having an illness or parasite-induced wet cough. Often but not always, there will also be a

running nose with this issue. Lungs tend to be the weakest link in our goats, so I don't like hearing them cough. Wild weather or outdoor temperature fluctuations, a goat getting really wet or not having protection from the wind, or stress



For our full product line & demo videos

LakelandSheepandGoat.com

Our extensive line of sheep & goat handling products are excellent quality and help to make your job easy!

Be sure to ask us about our sheep & goat handling packages!



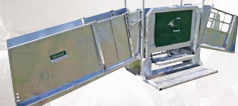
WORKING CHUTE & CROWDING TUB



DELUXE SPIN TRIM CHUTE



LAMB CREEP FEEDER



LAKELAND EASY KLAMP

lakeland

FARM & RANCH DIRECT

Your Ideas, Our Products... Better Together

 **1-866-443-7444**

I put my ear on the rib cage and listen. Only heart sounds should be heard. One should NEVER hear lung noises, which need immediate support.

from being transported makes them more susceptible to pneumonia types of problems. Of course, they can pick up bacterial and viral lung issues from exhibitions as well. Take the vitals, try and figure out why they are having their problem, keep them warm if they have a fever, and support those lungs. I actually put my ear on the rib cage and listen. Only heart sounds should be heard. One should NEVER hear lung noises, which need immediate support.

Goats that are itchy or missing hair need to be checked for external parasites such as mites, fleas, or lice. Also, pay attention to skin damage that may make your caprine susceptible to a skin infection. Goats that are missing hair on the bridge of the nose and/or the end of the tail, giving a forked tail appearance, and in advanced situations also hair loss to the ears, often will be a copper deficiency. Loss of hair coat color also often falls in this category. Copper deficiencies ignored will

negatively impact your herd's immunity.

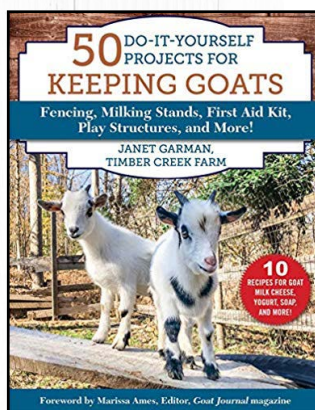
Other goat symptoms that one shouldn't neglect are limping, bleeding, swollen joints, stiff joints, mastitis, swollen tissue or abscesses, and bottle jaw. Bottle jaw is a swelling under the lower jaw that is often indicative of a severe life-threatening parasite overload. Mastitis is an infection of the mammary gland with varying symptoms from simple unevenness to hot, or swollen, or even black or blue-looking tissue to milking clots, strings, or blood. Always get help in the above situations unless you are very confident in working with them.

Though not conclusive, this list will give you a great start on things to watch out for with your beloved goaties.

Wishing you many happy and healthy goats! 

50 DIY PROJECTS FOR KEEPING GOATS

Build Fences, Make Goat
Milk Soap, Create Goat
Play Structures, &
Much More!



Get ready to jump into the world of goats, one DIY project at a time. Owning and raising goats doesn't have to be an expensive venture. With imagination, simple tools, and salvaged or bargain materials, you can make everything your goats need for their health, safety, and entertainment.

shop.iamcountryside.com
970-392-4419

KATHERINE and her beloved husband Jerry are owned by their LaManchas, horses, alpacas, and gardens on a small piece of Washington State paradise. Her varied international alternative degrees and certifications, including Master of Herbology and lifelong experience with creatures of many kinds, give her unique insight into guiding others through human or creature wellness problems. Her wellness products and consultations are available at www.firmeadowllc.com.

GIVE THE GIFT OF COUNTRYSIDE!

Someone on your list deserves **Countryside** so they can expand their knowledge of and love for living off the land.

SAVE UP TO
33%

That's right, you can give **Countryside** magazine for just \$19.97 for six issues — that's \$10 off our regular price. And YES, you can renew at that price, too!



Gift #1:

Name: _____
Address: _____
City, State, Zip _____

Gift #2:

Name: _____
Address: _____
City, State, Zip _____

Gift #3:

Name: _____
Address: _____
City, State, Zip _____

From: ☐ please renew my subscription at this special low rate.)

Name: _____
Address: _____
Email: _____

Charge my

Visa/MC # _____
Exp. date: _____ CVV#: _____
Phone: _____

☐ Check or money order enclosed.

One* subscription = \$19.97
Two* subscriptions = \$39.94
Three* subscriptions = \$59.91
Four* subscriptions = \$79.88
Five* subscriptions = \$99.85

*Six issues each subscription

Use another sheet of paper if you would prefer not to cut this magazine OR if you'd like to give more than 3 gift subscriptions.

MAIL TO:

Countryside Gifts
P.O. Box 1690
Greeley, CO 80632
or call 970-392-4419

*Canadian & International subscriptions please add \$12 per 6 issues.

GOAT CARE, MONTH TO MONTH

Customize this schedule to
keep you on track when
things get hectic!

BY LACEY HUGHETT

WHEN I FIRST GOT INTO RAISING GOATS, despite reading livestock books, I was still at a loss when it came to yearly health and management of my herd. Nailing down a schedule for my goats was one of the many challenges I encountered, and I am out to ease those growing pains for *Goat Journal* and *Countryside* readers who still need to make the leap.

Most goat vaccination schedules and care revolve around pregnancy, so this calendar will as well. My girls are usually bred in October. Use my schedule as a guide but remember to edit it with your specific dates, with your goals in mind. Once you have a calendar that works for you, print it out and stick to it! When things get crazy and hectic, that goat care calendar will be one of the tools keeping you on track.

Monthly maintenance: Assess each goat on an individual basis around the first of each month. During this time, write down the FAMACHA and the Body Condition Score (BCS). Check coat for bugs or dandruff. Check the feet for overgrowth or problems. Trim all hooves. Check the eyes, ears, nose, and mouth for any obvious issues. Consider doing an at-home fecal float test before and after worming goats to determine resistance and coverage, then worm according to needs. During the cold months, ensure goats are being fed enough and have good shelter.

JANUARY

DOES: Check for pregnancy 45-90 days after breeding. Look for signs of miscarriage or heat to indicate that the doe is not pregnant. Blood tests are optional. Administer CD&T shots for goats six to eight weeks prior to kidding.

LOOK FOR: In wet months, look for signs of hoof rot. When the weather changes rapidly from hot to cold, watch for pneumonia.

FEBRUARY

DOES: Check for signs of miscarriage or early labor. Repair any kidding areas and prepare a kidding kit for the upcoming month.

LOOK FOR: External parasites like goat lice prefer cold, dark, and damp environments. Watch for these during the cold months in particular.

MARCH

DOES: Check for signs of labor, assess cartilage and the presence of discharge for readiness to kid. Move does into kidding areas based on their estimated due dates. When kids are born, dip their umbilical cords in an iodine solution. Record the details of the labor and kid's health to the does' records.

LOOK FOR: Predators are attracted to the scent of birth. Watch the kids to ensure they are nursing and getting enough nutrition. Monitor for floppy kid syndrome or respiratory illness.

APRIL

DOES AND KIDS: Assess does frequently for mastitis. Kids get their first CD&T vaccination at one month of age. Begin milking does. Consider providing supplemental feed to lactating does based on BCS. If you are banding males, it is best done within 45 days of birth.

LOOK FOR: Begin to look for goat pink eye as conditions get warmer and dusty. Remember, goats can get allergies.



MAY

DOES AND KIDS: Give kids their second CD&T vaccine. Make sure kids are being dosed correctly for goat dewormers, as underdosing can lead to resistance. Weigh kids before administering as it is dosed by weight.

LOOK FOR: Flies as irritants. Consider traps or sprays if it is a bad year for flies.

JUNE

DOES AND KIDS: Start to wean kids, continue to milk does. Monitor for mastitis.

LOOK FOR: Check over records of herd. Determine which animals to sell or process. Determine the following year's goals. Continue to monitor for any signs or symptoms of common goat diseases.

JULY

DOES AND KIDS: Worm kids if necessary, using an updated weight. Sell kids marked for sale in your records. Process kids meant to be processed. Create individual records for the kids you are intending to keep.

LOOK FOR: Heatstroke.

AUGUST

DOES AND KIDS: Continue milking does.

LOOK FOR: Continue to monitor for common diseases and heatstroke.

SEPTEMBER

ALL GOATS: Draw blood samples from all goats and test for CAE, CL, Johne's, and Brucellosis. Kids must be over six months old to be tested for CL, so the test may need to be completed closer to the end of the month.

DOES AND KIDS: After blood has been drawn for testing, administer CL vaccine to kids. If it is done prior to the blood draw, it could cause a false positive on the test. Worm kids using an updated weight. Flush all goats you are planning on breeding by giving them extra grain rations.

LOOK FOR: Obtain a high BCS for any breeding animals to prepare for breeding season. Separate does not putting on or maintaining weight.

OCTOBER

Kids: Give second CL vaccine.

Breeding: When does start showing signs of being in heat, place the buck in their pen for 42 days. Doelings from this year may be bred only if they are showing signs of being in heat and have grown to 60-70% of their expected adult weight. Do not breed any animal with a positive pregnancy blood test from last month.

Look for: Exhaustion from the buck. If utilizing a marking harness on the buck, look for signs of the doe being bred.



NOVEMBER

ALL GOATS: Ensure goats are getting enough food in the colder weather.

LOOK FOR: Foot rot, fix any drafty shelters.

DECEMBER

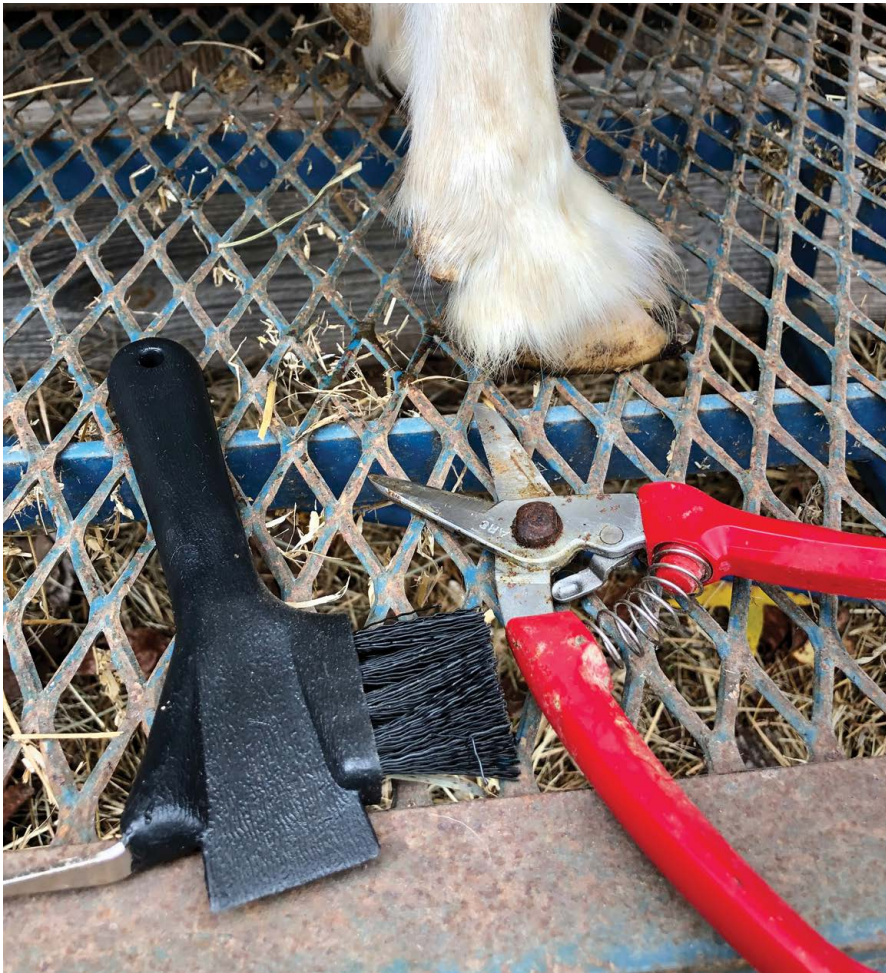
LOOK FOR: Respiratory illness.



Keeping goats is exponentially easier once you take some mystery out herd health management. This calendar tool helps break the yearly goat care management tasks into easily digestible chunks. Take it, make it your own, and live by it!

Trimming Goat Hooves for Overall Health

BY JANET GARMAN



Each goat has different rates of hoof growth. Checking the hooves every two to four weeks and trimming as needed is a good rule of thumb.

TRIMMING GOAT HOOVES is essential to good health. The hoof needs regular maintenance to promote a healthy life for your goat. Overgrown hooves can hide diseased tissue and lead to a slow, painful decline in the goat's overall condition.

When you are looking at the foot from the top view, you see two separate toes, or cloves, of the hoof. Each clove acts as an independent hoof! Both halves of the full goat hoof have the same parts. Hopefully, you also see clean, hard hoof material. Picking up the hoof allows us a view of the interesting underside. A healthy, well-trimmed hoof clearly shows the various layers.

The hard outer layer is made of a keratin material, much like our fingernails, but tougher and thicker. Adhering to the outer hoof is a rim of lighter-colored growth material. This is called the hoof wall and is the underside of the outer hoof. Growth results in a ragged hoof, flaps of overgrown hoof tissue, and lengthening toes. The central portion is the sole (or frog) of the hoof. In a healthy hoof, this will need little to no attention. I brush off any mud that has adhered to it, mainly so I can make sure there are no abrasions or inflammation present. This is softer tissue and can suffer bruising, cuts, rotting, or fungal infections. Other parts of the hoof are referred to as the toe, heel, bulb, and coronet, which is the band of the hoof at the end of the ankle.

There should not be any separation between the hoof wall and the frog portion. Dirt, mud, feces, and anything imaginable can get caught in between the two cloves, and hair will also grow between the cloves. An oil gland is located between the two halves, at the end of the ankle/beginning of the hoof. This oil gland can get clogged, so it is good to check for it occasionally.

Why Trimming Goat Hooves is Necessary

The outer hoof wall grows continuously, all year long. As the hard shell grows, it folds under the hoof, and the toes grow long and pointy. Eventually, if not trimmed, the hoof shape will change, and the tips will curl up or to the side. The flaps under the hoof provide a hiding place for moisture, mud, manure, bacteria, small pebbles, and bits of food. All this can lead to diseased hooves. The goat feels great discomfort and stops moving around as often as normal. The limited foraging intake begins to take a toll on the animal's condition.

In addition, a longer-reaching consequence is occurring. As the goat hoof continues to grow, it puts unusual pressure on the joints, particularly the joints in the pastern area of the lower leg and the knee. When your goat is lame, it is reluctant to get up for food. It will limit foraging. The goat will quickly become unhealthy and ill.

As the hoof wall grows, the flaps fold under the hoof. Trimming goat hooves regularly prevents excess growth from folding under the hoof. Proper and timely trimming for goat hooves stops the mud, manure, bacteria, stone, and food from harboring in the hoof. The goat will feel less discomfort and will continue with normal activity. The goat continues to forage and move.

How Often Should You Trim Goat Hooves?

Each goat has different rates of hoof growth. Checking the hooves every two to four weeks and trimming as needed is a good rule of thumb. Trimming goat hooves on a regular schedule is part of animal husbandry and herd management. Find the routine that works for you. Be sure to check in between trimmings if you notice lameness or reluctance to walk around.

The flaps under the hoof provide a hiding place for moisture, mud, manure, bacteria, small pebbles, and bits of food. All this can lead to diseased hooves.

In addition, it puts unusual pressure on the joints, particularly the joints in the pastern area of the lower leg and the knee.

How to Examine and Trim an Unruly Goat

Many goats elude hoof trimming by running away or making your life miserable while you attempt to trim. A few animal-handling tactics might help you succeed and keep the stress to a minimum.

Take a small section of wire fencing and calmly move the goat into a corner. Have someone hold the fence while you put the halter on the goat. At this point, you can either work on the hooves right there in the confined space or move the goat to the stand. In either scenario, you will need to pin the unruly goat against a wall to work on him. Sometimes trimming goat hooves is a full-contact sport!

FAST. EASY. ACCURATE.
THE ULTIMATE CHAINSAW SHARPENER

- *TUNGSTEN CARBIDES LASTS 10X LONGER THAN FILES
- *CARBIDE SIZES: 5/32 3/16 13/64 7/32 INTERCHANGEABLE
- *FIXED ANGLES AT 30° WITH 25°/35° GUIDES AVAILABLE
- *ELIMINATES USER ERROR WHEN SHARPENING



VIDEO/INFO/ORDER
TIMBERLINESHARPENER.COM

TIMBERLINE
CHAINSAW SHARPENER

2300 N. YELLOWSTONE
IDAHO FALLS, ID 83401
208-405-2020

\$15 OFF
WHEN ORDERING ONLINE
W/PROMO CODE: CSMAG

North American BABYDOLL Southdown Sheep Association and Registry



Celebrating 18 years of service to the Babydoll Southdown breed. A non-profit corporation, run by a volunteer, member-elected, Board of Directors.

For more information about
BABYDOLL Southdown sheep,
and the NABSSAR,
visit our website at:

www.nabssar.org

Start your day with a
Smile!...

Own a BABYDOLL!





TOOLS FOR TRIMMING GOAT HOOVES

- Hoof trimmers
- Goat stand. This is not mandatory, but it will make the job easier on your back.
- Goat halter for moving the goat to the stand
- Hoof pick and brush
- Rag or old towel for wiping mud off the hoof
- Purchased products — Corn starch for blood stop, zinc oxide or copper sulfate foot solution for foot rot.

HOOF ISSUES TO LOOK FOR WHILE TRIMMING GOAT HOOVES

- Abscess
- Hoof scald
- Contagious hoof rot
- Cracks and separation in the hoof
- Unusual odor



The back legs are usually a bit tricky. Understand that this is because a goat is a prey animal. The kicking and pulling their foot away are reflex reactions to the leg being grabbed and held. Once you get the hang of trimming, you will be able to work quickly and complete the trim without much drama. Also, a small amount of sweet grain or tasty forage might distract the goat from the task being done.

How Trimming Goat Hooves Improves Goat Health

Frequent trims keep goats comfortable as they move around doing goat things. Performing frequent trims allows you to also check eyes, teeth, joints, and coat condition. Trimming goat hooves is an essential part of goat keeping. Start your goats on a path of overall good health with frequent inspections and trims. 🌿

Hoof Trimming *Made Easy* and *Safe* for Your Goat



*Electric Plug-in or
Battery Powered Options*



- Great for both Hard Overgrown Hooves or Well-maintained Hooves.
- Pain Free Trimming for User and Goat.
- Smoother Hooves – Less Hoof Rot.
- Precision Trimming makes Confirmation Easier to Achieve.
- Cdisc & Grinding Discs Developed with the Goat's Hoof in Mind.



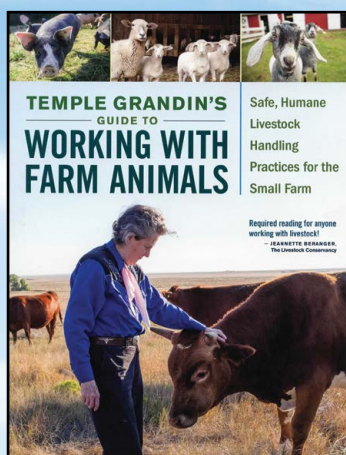
Questions? Visit our Website for Full Details, Videos and More or Give Us a Call . . .



MyBossTools.com
877-320-8203

HOOF BOSS

Temple Grandin's Guide to Working With Farm Animals



Safe, Humane Livestock Handling Practices for the Small Farm

BY TEMPLE GRANDIN

Award-winning author Temple Grandin is famous for her groundbreaking approach to decoding animal behavior. Now she extends her expert guidance to small-scale farming operations. Grandin's fascinating explanations of how herd animals think — describing their senses, fears, instincts, and memories — and how to analyze their behavior, will help you handle your livestock more safely and effectively. You'll learn to become a skilled observer of animal movement and behavior, and detailed illustrations will help you set up simple and efficient facilities for managing a small herd of 3 to 25 cattle or pigs, or 5 to 100 goats or sheep.

To get your copy visit: **shop.iamcountryside.com**
Or call: **970-392-4419**

Tips for Weaning Dairy Goats

Knowing When to Wean Goats Can Reduce Stress for You and Them

BY KATE JOHNSON

EARLY SPRING IS OFTEN when most kidding takes place, but eventually, spring turns to summer, and it's time for weaning. Dairy goats can be weaned in much the same way as any other type of goat, but since milk production of the dam is probably more important than for other types of goats, that is the focus here. It's important not only to know when to wean goats but also to do it in a way that minimizes stress and ensures the ongoing health and production of those hard-working milkers.

I've been raising goats for milk for about 10 years, and I've raised my kids several different ways

during that time. Some have been exclusively dam-raised, some exclusively bottle-raised, and some a combination of the two. Depending on the technique you choose, the method for how and when to wean will vary.

Weaning dairy goats can be stressful, but you can reduce the amount of stress for yourself, the dam, and kids if you follow these guidelines.

First, decide when you want to wean. As a general rule, I like my kids to be on milk for at least three months. Some goat owners feed milk for a shorter or longer length of time, but this has worked well

for me. I find that it gives the kids a really good start in life while also giving me access to the mother's milk for at least six to eight more months before drying them off for the next season.

As you decide specifically when to start weaning, consider what else will be going on in your life, as well as in the life of your goats, around that time. For instance, if your goats are going to a show right as the kids are turning the appropriate age for weaning, you'll probably want to wait until a few days to a week after you return home to start weaning. This will give them a chance to recover from the stress

Be careful that you don't stop milking the dam too suddenly, as this is a recipe for discomfort, mastitis, or other problems in the doe. If you're going to take the babies away from their dam, you need to step in and milk her, at least for a while.

of the show and transportation and be sure no one is getting sick. Likewise, suppose you have a vacation planned or are anticipating something else disruptive in your own life. In that case, you may choose to wean a little earlier or a little later to prevent overlap with these potentially busy times.

Once you've decided when to begin weaning your goats, decide how to do it. This decision will be based on how your goats are raised. Although there are many hybrid options for raising kids, we'll discuss dam-raised vs. bottle-raised.

Weaning Dam-Raised Kids:

Weaning dairy goats that are exclusively raised by their dams is sometimes easier than weaning bottle-raised kids. Those kids are more likely to be taking in other sources of food and water earlier than bottle-raised kids because they imitate what they see their own mother doing. This means they already know how to supplement their thirst and hunger better than those bottle babies. Secondly, mamas might decide when to wean those babies, and if you're not planning to use the milk for yourself, this is always the easiest and most natural way to wean. Once those babies start getting bigger and pushier, many does will kick them off the udder. But if you want access to the milk before she weans them herself, you'll need to find a way to separate them from each other.

One challenge of weaning dam-raised goats is that they are often bonded after spending all that time together. This can cause a lot more stress, especially to that baby who has had unlimited access to its mama and her milk for its entire life. I like mine to be in an area where they can still see each other and maybe even stand next to the fence together, but that fence needs to be secure enough that those wily little babies don't figure out how to



As you decide specifically when to start weaning, consider what else will be going on in your life, as well as in the life of your goats, around that time.

BIOTIC
INDUSTRIES INC.
www.biotic.com

Biotic Industries is committed to the development of products that reduce the workload of farmers while helping to increase their profits.

LAC-TEK LAMB & KID FEEDERS

- AUTOMATIC MILK FEEDER
- 2 SIZE FEEDERS
- RESPECTS NATURAL FEEDING HABITS
- MIXES MILK ON DEMAND
- USE ANY KIND OF MILK POWDERED REPLACER
- LOW COST!
- HUNDREDS OF SATISFIED CUSTOMERS!



CALL BIOTIC TODAY! (931) 437-2514



Weaning dairy goats that have been bottle-raised is generally easier than weaning dam-raised kids, at least in my experience. Now it's just a matter of gradually reducing the amount of milk and the number of bottles you are giving your babies each day.

nurse right through it! Sometimes if I have goats that are particularly bonded or very stressed about being separated, I might start by separating just for a few hours, then maybe overnight, and then gradually increase the time until they realize that they can, in fact, survive without each other.

Also, be careful not to stop milking the dam too suddenly, as this is a recipe for discomfort, mastitis, or other problems in the doe. If you're going to take the babies away from their dam, you need to step in and milk her, at least for a while. Depending on whether you want to keep the dam's milk production up for showing and/or so that you can have all that yummy milk for yourself, you'll either have to milk more or milk less. When I wean babies from my show goats, I step in and milk at least twice a day to make sure the dam is both comfortable and maintains her milk production. If I'm weaning kids from a dam that I don't want to continue milking, I will need to milk for a while but will take my cues from how much she's

producing. I will check her udder about 12 hours after I've pulled her kids and if it's not too hard, wait a little longer. If it's hard as a rock at 12 hours, I know it's going to take a while to gradually milk her down. Either way, pay attention to how much and how quickly she is filling up, and gradually spread out the time between milkings to reduce her production.

Weaning Bottle-Raised Babies:

Weaning dairy goats that have been bottle-raised is generally easier than weaning dam-raised kids, at least in my experience. They are already used to being separated from their dams, and this means you have also already figured out another plan for the dam, whether you have dried her off or have continued milking her. Now it's just a matter of gradually reducing the amount of milk and the number of bottles you are giving your babies each day. If you're at two feedings a day, drop it to one. Then eventually drop that one feeding altogether.

You can also reduce the amount

of milk at each feeding before you start reducing the number of feedings, giving them two bottles a day at first, but only filling those bottles with half as much milk. Then drop one feeding, and eventually drop the second feeding. Be sure that you have plenty of fresh water and hay available for them.

I often coincide weaning my babies with when they go out on pasture with their dams. I don't let my babies out to pasture before about three months because we have coyotes in our area, and even though we do have a guard llama with them, I like the kids to be a little bigger. By letting them start on pasture around the same time I'm weaning them, I find that both the distraction of going out on an adventure with the herd, as well as the extra food they're taking in from the grass and plants, helps to reduce the complaining on their part.

One last word about weaning dairy goats that has as much to do with generally caring for goats as it does with the weaning process itself: Goats are herd animals and should always have at least one friend with them. This means that if you have a single doe and a single kid, weaning is going to be a lot more stressful for both of them if it means they have to be alone during the process. It's best if they each can have a friend to make life (and weaning) a little more bearable for all. 🐐

KATE JOHNSON raises dairy goats at www.briargatefarm.com, runs a cheesemaking school at www.theartofcheese.com, and is an active volunteer with the Boulder County 4-H program. She's also a member of the Colorado Dairy Goat Association.

Preparing For Kids

BY KATE JOHNSON



2 MONTHS PRIOR TO DUE DATE:

- Dry off doe: Does should have 2 months off from milking before they kid again.

6 WEEKS PRIOR TO DUE DATE:

- Give the doe a hoof trim: Doing this before she's even heavier will be easier for her and for you!

4 WEEKS PRIOR TO DUE DATE:

- Give CD&T vaccine: This will help protect both the doe and the unborn babies
- Start giving a little grain, gradually increasing so that she'll be ready for the increased calories needed once she's in milk.

2 WEEKS PRIOR TO DUE DATE:

- Get your kidding kit together (see below for recommended items).
- Make sure you have important phone numbers handy including your vet and any experienced goat owners that could be on call to help if needed.

1 WEEK PRIOR TO DUE DATE:

- Clean out your kidding stall and bed it with some nice clean straw.
- Clip hair from the doe's udder, belly in front of the udder, tail, and behind back legs. (This is optional but sure helps make post-kidding cleanup easier.)
- Start putting the doe in a kidding stall with a friend or family member that she gets along with, so she can get used to it.

A FEW DAYS BEFORE DUE DATE:

- Start watching for sign of labor: standing off by herself, pawing at the ground and getting up and down a lot, going off feed, soft ligaments around the tail head, full and shiny udder, and hollowing out around the hip bones when the babies drop are all signs labor is getting close. Gooney, ropey discharge indicates you're probably within hours of delivery.

ITEMS FOR YOUR KIDDING KIT:

- ☐ Paper and pencil
- ☐ Clock or watch
- ☐ Towels
- ☐ Bulb syringe
- ☐ Dental floss (for tying off umbilical cords)
- ☐ Scissors
- ☐ Iodine
- ☐ Small cup for iodine (to dip umbilical cord end)
- ☐ Rubber gloves
- ☐ Antiseptic lubricant
- ☐ Molasses and warm water (a revitalizing treat for mama after delivery)
- ☐ Paper towels/wet wipes
- ☐ Nutridrench
- ☐ Bottle & nipple
- ☐ Colostrum or colostrum replacer

KATE JOHNSON raises dairy goats at www.briargatefarm.com, runs a cheesemaking school at www.theartofcheese.com, and is an active volunteer with the Boulder County 4-H program. She's also a member of the Colorado Dairy Goat Association.



RAISING PIGLETS

Off to a Successful Start



BY JANET GARMAN

YOUR FIRST TIME RAISING PIGLETS is about to start.

The sow you cared for is ready to farrow. When the sow gets ready for farrowing, she will stay more to herself. This is an early sign that you should prepare the birthing area. If you are going to separate her from the rest of your pigs, and you have not done so, now is the time. Make sure she has plenty of dry straw bedding, fresh water, and a daily ration of grain. Once the sow starts lactation, she will require lots of calories in order to maintain her weight plus make enough milk for the piglets.

The second sign of a sow about to farrow is in the teats. The glands will look full and the teats will possibly leak milk. The actual birth process is over quickly for most sows. The piglets are born one at a time but in quick succession. Soon they have found their way to the milk bar and are happily drunk on milk. Most of our sows have farrowed in the wee hours of the morning. We are greeted by happy satisfied piglets when we go in with

the morning feed.

When to Intervene While Raising Piglets

Most times the sow will handle all of the birth process by herself and not require any assistance. Occasionally a piglet may be born with the sac still intact. The sac will need to be removed and the piglet might need to be swung back and forth by its hind legs to empty the secretions from the airway. And it is possible for a piglet to get stuck on its way through the birth canal. If you find that the sow is struggling with contractions and no piglets have been born for 20 minutes, it might be time to check. At this point, I would recommend that you refer to a fellow pig farmer or a veterinarian for help. You will need to clean your hands and forearms well and describe what you are seeing to the vet. Inserting your hand into the birth canal to free a piglet might save both the piglet and the sow.

Usually, no complications will occur and your sow will be just

fine. The piglets are born with their eyes open and they are able to walk and move to the teats on their own. Healthy piglets are strong and active from birth. The piglets will try to stay close to the sow to stay warm. The first milk, called colostrum, is vital to the piglet's immunity. Make sure all of the piglets are nursing.

What About a Runt Piglet?

The litter will most likely have a runt, meaning a very small piglet that is not as well developed as the litter mates. This happens because a sow is able to conceive over a span of time. If she is left with the boar, the matings can continue through her estrus cycle. The piglets conceived toward the end of estrus will not be as developed as the older fetuses at farrowing. Often, the runt does not survive. If it is viable, the piglet may just need a little extra tender love and care and a warmer environment for a few days. Some farmers are successful at saving the at-risk runt by keeping it in a box in the house and

returning it to the sow for feedings throughout the day. Be aware though, it is just as common to lose a runt as it is to save one.

What to Do the First Day

Feeding the sow, checking for birth defects, runts, teeth, and iron injections should all be carried out during the first day. There are a number of items that should be attended to as soon as possible when raising piglets. This is a list of the most common procedures. Not all farmers will do all of the following.

DIP NAVELS — During the first day of life, take care of the navel areas of the piglets. Dipping the navel area in an iodine solution should be done for the entire litter. Alternately, you can use a product such as BluKote or a wound spray on the navel and any other open sores.

CLIPPING THE WOLF TEETH — Piglets are born with very sharp teeth on either side of their jaw. These teeth can cause problems with the piglet cutting the sow's teats or with the piglets hurting each other during play or fighting over a spot at the udder. These small needle-sharp teeth can be clipped off soon after birth.

EAR NOTCHING — Ear notching is done to mark the pig's litter and position in the litter. Ear tags can also be used for this purpose.

TAIL DOCKING — In crowded feedlot conditions, leaving the tails on the feeder pigs may lead to infections and wounds from other piglets biting the tails. In our situation, raising pastured free-range pigs, or natural pig farming, we do not dock the tails and haven't had any problems arise from that decision. We have been very happy with the results from raising piglets on pasture conditions.

CASTRATING PIGS — The concerns with unneutered male

pigs are valid. Aggressiveness can escalate quickly and an uncastrated young male can turn on people or other litter mates. The meat from an older boar will likely be tainted from hormones. If you plan to butcher sooner than five months of age, you might be able to get away without castrating. If you are going to castrate, do it as soon as possible. The young piglets will do better if it is carried out early and quickly.

IRON INJECTIONS — The sow's milk is the perfect food for the piglets but it is not a complete diet. The milk lacks iron and often piglets will become anemic. Giving a 1cc injection of iron on day one and another at two weeks of age will prevent anemia in most cases.

ANTIBIOTICS — As a preventative, many farmers will inject a small amount of antibiotics soon after birth. Doing this can stop any navel infections or infected wounds in the piglets. If you are planning on raising piglets without pharmaceuticals, do some research on natural herbs and herbal sprays that are safe for use with piglets.

Heat Lamps and Chilling

Piglets are largely hairless and susceptible to chilling. Using floor warming pads or heat lamps can help with this. Also, a deep bedding of clean straw gives the sow something to layer over her piglets to keep them warm. The use of heat lamps is common but also carries the risk of fire and burns. Set up the lights before putting the sow into the farrowing room or stall. Many farmers will put up a guard of some sort that keeps the sow from being directly under the lamp and overheating but allows the piglets to go under the lights. Keep the light suspended at least two feet above the piglets and the dry bedding. Remember that the sow can stand up and reach things by putting her front feet on the gate



or wall. Find the happy medium where the piglets have the warmth of the heat lamp but the setup is out of the way of the sow and does not allow her to become overheated.

Behavior

We have been fortunate, in our pig raising, that we have not had an aggressive sow or boar turn on the piglets. It's a bit unusual, but we have been able to raise the piglets with both the sow and our boar remaining together. This does not always work out and often the boar will turn on the piglets, so proceed cautiously. In addition, always carry a pig board into the stall with you. A pig board is a large square of wood or some other sturdy material with a handle cut out of it. Keep the pig board between the sow and you. This is less threatening to a nervous sow, and protects you if she should lunge.

Pig farming is a journey and an experience. Raising piglets can be very enjoyable even with the learning curve and occasional heartbreak. Keep in mind that each litter will bring its own challenges and incidents. And remember, every pig farmer started with that first sow farrowing. Learning how to raise a pig for meat starts with raising piglets! 🐷

8 Pig Diseases the Small Producer Should Know

BY JANET GARMAN

WHILE PIGS ARE GENERALLY a hardy livestock to raise, you should be aware of certain pig diseases and how to proceed, should your pig become ill. Pigs raised with good hygiene, appropriate shelter, and nutritious food will have few problems but can still become infected. The current commercially produced pig is almost a different animal than the more naturally raised, pastured pig. Each has its own strengths and weaknesses that can contribute to the occurrence of pig diseases.

Our pigs are not raised in a typical confinement setting. Although they are enclosed with fencing, they have room to roam and root, basically acting like wild hogs. Raising pigs on pasture allows them to dig up dirt with their snouts, searching for roots and grubs and whatever other goodies might lie beneath the soil surface. They lie in wallows of mud and water. We feed grain and hay to supplement the nutrition they forage for themselves. Additionally,

we practice biosecurity making sure the pig area is not open to visitors or other animals, especially visitors who also raise hogs.

Confinement-raised hogs are often reared on concrete or steel for ease of cleaning. They have little to no room to roam and root or act like a pig. This leads to a different animal than the more naturally-raised pig. Removing a species from its natural tendencies causes stress. Stress makes an animal more susceptible to disease and illness.

Kelly Klover notes in his book, *Storey's Guide to Raising Pigs* (Storey Publishing, 2009), that even if you plan to raise a more natural hog, buying from a conventional confinement stock will still require you to selectively breed vigor back into your herd. Klover recommends breeding for maternal traits such as mothering ability and quick deliveries. You should select piglets based on size, growth rate, and a strong will to live. This advice is good for any breed of pig you choose to raise.

Signs of Pig Diseases and Illness

Sick pigs are slow to get up and show less interest in food. They may not eat at all. The pig will act depressed and disinterested. Diarrhea, vomiting, stiff gait, uncoordinated walk, and glazed eyes can all signal a serious illness.

8 Pig Diseases to Watch for

There are innumerable pig diseases that can occur in a herd. Some are more common than others. Thankfully, many serious pig diseases have all but been eradicated with vaccines, good husbandry, and management. You may come into contact with some of the following as you raise your pigs.

MASTITIS — Mastitis in an udder infection that can appear before or after farrowing. *E. coli* in the environment is usually found to be the cause. Symptoms can include a swollen, sore, red udder, fever, and discharge. Economically, the infection can lead to the sow not allowing the piglets to nurse, causing piglet death. Acute mastitis can lead to the death of the gilt or sow. Older sows are more likely to have the sub-acute form of mastitis. *Streptococci* or *Staphylococci* are the likely cause. The treatment for both forms include antibiotics prescribed by a veterinarian along with creating a cleaner farrowing pen and better hygiene for the farrowing sow.

RHINITIS — Atrophic rhinitis is a general term for respiratory illness in swine. Sneezing, runny discharge, and runny eyes can be signs. The economic effect is slow growth in piglets because of lowered food intake. In extreme cases, the bones in the nose twist and the snout grows crooked. Pneumonia can occur because the pigs are weak from rhinitis.

GREASY PIG DISEASE —

Greasy pig disease is caused by a *Staphylococcus* infection. Often the scenario includes a skin injury or infection with mites (mange) that goes untreated. Nutrition can affect the severity. Greasy pig disease is more common in piglets. You notice skin flakes and a crusty secretion. The skin may crack. Using antibiotics and medicated shampoo is the treatment.



SCOURING — Scours is another name for diarrhea in livestock. Diet, infections and even stress can cause scours. It is a dangerous condition because dehydration can occur quickly and suddenly. Scours in your herd or in one animal is a good reason to consult with your veterinarian and take precautions against dehydration. Using rehydration solutions is a good place to start, as dehydration can lead to a quick death. Oral glucose and electrolyte products for livestock are good. You can also use Gatorade, Pedialyte, and homemade electrolyte solutions. Keep the animals warm and dry during the illness.

LEPTOSPIROSIS — *Leptospira pomona* can wreak havoc in a pig herd. It can cause a lot of different

issues, including, fever, diarrhea, not eating, abortion, stillbirths, and weak piglets. Infected urine from dogs, cows, rats, and pigs carries the virus. The organism enters through the nasal passages, mouth, or a cut in the skin. A vaccine is available.

SWINE INFLUENZA — Pigs get the flu just as humans do. Humans and pigs can transmit the flu virus back and forth. The parasitic lungworm can transmit influenza through its eggs. The lungworm infection process includes the earthworm which is ultimately eaten by the pig. The flu onset is sudden. It includes a dry cough, fever, discharge from eyes and nose and little to no appetite. When weakened by flu, the animal is susceptible to secondary infections. If the sow becomes ill with flu while pregnant, the piglets might be small and not thrive. Unless a secondary infection occurs, the treatment is keeping the animals warm, comfortable, dry, and hydrated as the virus runs its course.

TRANSMISSIBLE GASTROENTERITIS (TGE) —

TGE is a coronavirus and is very contagious. The pig ingests the virus from the environment. Dogs, birds, other infected pigs, and boots can bring the disease to the pigs. The rate of recovery is better in older hogs. Young pigs often die from diarrhea and vomiting. Extreme nursing care is about all you can do. Focusing on preventing dehydration and keep watch for a secondary infection, as with influenza, that can require an antibiotic treatment.

PARASITES — Parasites and the control of them will be an ongoing farm management task. Pasture and paddock rotation, good cleaning and sanitizing of stalls and equipment, and reducing stress for the animals will help reduce pig diseases from parasites. Internal parasites include worms

and microorganisms. External parasites such as mites, ticks, and lice are easier to see and treat, but they can prove stubborn. Bacteria in the environment such as *E.Coli*, *Salmonella*, and *Staphylococcus*, can all cause illness in weakened or stressed animals. Pasture rotation and appropriate parasite control products are important. Keep good notes on what steps you take to control parasites.

Types of Parasites Common in Pigs

The worms commonly associated with raising pigs include roundworms, lungworms, whipworms, and red stomach worms. Some deworming products are added to the water, feed, or injected. Coccidiostats are administered in the treatment of coccidia, a microorganism that causes diarrhea and failure to thrive. Lice and mites are often battled with dust products, pour-on liquids, or injections. You should read the label carefully on products used. Withdrawal time is usually a factor before you can butcher the animal or send it to market.

Organic methods may be something you would prefer to use. When you use organic methods of parasite control, pasture rotation is even more important. Breaking the life cycle of the worm or parasite is key to effective worm control.

Many hog diseases have been mostly eradicated with good agricultural practices, modern antibiotics, and cleanliness. Hog cholera, trichinellosis, and brucellosis have significantly declined or been eradicated in the United States, although outbreaks still occur in other countries. In our years of raising a small pasture herd, the only disease we have had to deal with is mastitis. Knowing what to look for in your herd and being ready to take action will help your pigs recover should an illness strike your farm. ©

Feeding a Pig for Market

BY MEL DICKINSON



THE SPRING AND SUMMER are a great time to bring pigs onto your farm or homestead. Within a few months, it is possible to have homegrown pork to fill your freezer. Raising and feeding a pig is a very rewarding experience. Market pigs can be a great addition to both farms and homesteads.

Pig Farming

When a pig is farrowed or born, a piglet consumes milk from the sow. In addition to the sow's milk, piglets are gradually introduced to solid feed. They are then weaned at around 40 pounds.

At this time, market piglets are often purchased by farmers and homesteaders. Piglets are considered to be in the nursery phase until they reach 75-100 pounds. According to *Storey's Guide to Raising Pigs*, during this time, the weaned piglets require 15-16% of their diet to be protein and should eat a commercial "grower mix" until they reach between 100-150 pounds. Next, a market pig transitions into a "grower/finisher feed" that contains protein levels ranging from 14-15% until the pig grows to 175-200 pounds. At the final stage, a pig is moved onto a "finisher feed" with protein levels dropping to 12-13%

of the pig's diet. The pigs will stay on this ration until they reach their desired market weight.

Market pigs will eat between 650-750 pounds of feed between weaning and the time of slaughter. Pigs self-

regulate how much they eat and can be fed using a free-feeding or limited-feeding system. In a free-feeding system, pigs have constant access to their ration and can eat when they please. It is important to use a covered feeder when using the free-feeding system to ensure feed stays clean and dry. Limited-feeding is when market pigs are fed twice a day and given 90% of their total daily needs. This tends to yield a leaner processed meat. Either method can be used. When deciding how to raise a pig for meat, each

farmer or homesteader should use the feeding method that best fits their situation. While feeding times can vary, clean water should be offered to pigs at all times.

Market pigs will eat between 650-750 pounds of feed between weaning and the time of slaughter.

There are some additional points to remember when choosing and feeding commercial pig rations. Market and show pigs eat different feed. The rations are formulated for the specific needs of each type of pig. Be sure to check the labels and be certain the ration is for market pigs and not show pigs. If possible, shop around for feed prices. Prices generally fluctuate based on current grain prices, but there may be differences in store prices that could add up over time. Also, ask if there is a discount for buying feed in bulk. Stores may offer discounts for purchases of 500 pounds or more feed. Each company has its own recommended guidelines for feeding their grower, grower/finisher, and finisher ration mixes and weights may vary. Check the label and follow the specific instructions for different stages of feeding. Finally, to avoid any excess stress or gastric disturbances, it is important to slowly transition the pig onto each new feed gradually over a three-to-seven-day period.

While commercial rations are not necessary when feeding a pig, it is an easy way to make sure your livestock is meeting its entire vitamin, mineral, and protein needs. If deciding not to use a commercial feed pig ration, there are ration reference guides available and animal nutritionists for hire to make sure the customized diet is meeting all the necessary nutritional needs.

In addition to using grain rations for feeding a pig, supplementation can be used to enhance a pig's diet, improve meat flavor, and potentially cut feeding costs. Pigs are omnivores and eat both plants and animals. Much like humans, they have a single stomach and can eat a similar diet. Fresh pasture, dairy, produce, and spent grain are popular food supplements for pigs.

Raising pigs on pasture is a great addition for the health, happiness, and nutritional supplementation when feeding a pig. When on pasture, pigs eat grass, roots, and bugs. If given access to areas around fruit or nut trees they will eat the wind-fallen foods. Pigs can be very destructive to pasture. To prevent excess rooting behavior and pasture damage, it is important to have a rotational grazing system. Pork from pigs on pasture contains higher vitamin D plus minerals found in the soil where it was raised.

Dairy products such as milk, yogurt, and cheese are favorites for pigs. If a farmer or homesteader has dairy stock and has excess milk available, it can be given to market pigs. Likewise, check with small dairy farms, yogurt producers, cheese makers, and grocery stores in the area to possibly get dairy products that have passed their sell-by date.

Produce is another healthy choice when supplementing pig food. Extra vegetables from the garden and wind-fallen fruit are ways homesteaders can help provide food for their pigs. Local farmers markets are also great resources for produce supplementation. Farmers may have unsellable produce at the end of the market day



they may be willing to give out or sell for a nominal fee. Just like humans, pigs can be picky eaters. It is a common misconception that pigs will eat anything you give them. Sometimes it takes introducing new produce to a pig a couple of times before they will eat it. In some cases, pigs will never care for certain fruits and vegetables.

Local breweries and home brewers can be another good resource for pig farmers. Spent grain (the leftover grains used to make alcohol) can be used as supplemental feed as well.

It is important to remember while supplementation is not only beneficial for a pig's diet, can enhance meat flavor, and potentially help farmers and homesteaders lower their overall costs, supplementation should consist of no greater than 10% of a pig's overall diet.

Raising and feeding a pig for market is a very rewarding experience. There are many benefits of homegrown pork. After a pig's basic nutritional needs are met, there are many different ways to grow out a market pig, making it a great addition for each unique farm and homestead. ©

MEL DICKINSON is a full-time farmer and registered dietitian. Mel and her husband Ben own and operate Unconventional Acres, a small pasture-based farm in southwestern Wisconsin focusing on beef, pork, and eggs. Learn more about Mel and Unconventional Acres at: unconventionalacres.com
[instagram.com/unconventional_acres](https://www.instagram.com/unconventional_acres)

5 MEAT RABBIT FACTS TO KNOW BEFORE YOU BUY

BY MAAT VAN UITERT



RAISING RABBITS FOR MEAT is a wonderful way to harvest your own meat in a small area. But there are some facts you should know before buying your first rabbit.

1. You can raise meat rabbits in colonies or in separate cages.

When it comes to meat rabbits, you have a couple of choices for housing. Some rabbit owners prefer to keep their rabbits separate and only allow them access during breeding times. Other owners feel a colony is healthier and closer to a rabbit's natural environment.

Both types of housing have their benefits. But rabbits can be very territorial (see #5 below), and we did not have a good experience keeping our rabbits together.

We also found that we had much less control over breeding, and during the winter, this could mean a lot of lost babies, since we had no idea when the mothers would birth.

However, there are strong proponents of keeping rabbits in colonies, and I do encourage you to read about it and make

the best decision for your rabbits. Our rabbits are able to see and touch each other a little, which I think is necessary for their mental health. They can't hurt each other; however, nor can they touch any other doe's kits.

2. Any rabbit will give you meat, but some breeds are better than others.

While it's true that any breed of rabbit can be kept for meat, some meat rabbit breeds were developed to yield more meat while eating less than other breeds. We breed mostly New Zealand rabbits for meat, although we do have one wonderful wild rabbit doe that has been tamed.

Although she is smaller, she gives us nice, large litters and is an excellent mother. In our area, buyers prefer the taste of wild rabbits, particularly older buyers who fondly recall their days as hunters. So, we try to keep a supply of meat rabbits with her bloodlines to satisfy them. If you're wondering what to feed meat rabbits, a high-quality commercial feed is a good place to start.

3. Rabbit gestation is 28-31 days; and you had better be prepared!

An important fact is that rabbits can give birth anywhere from day 28 until day 31. I've learned the hard way that you had better be ready to hand your doe the tools she needs to build a safe, warm nest for her kits. On day 27 or 28, give her a nesting box as well as clean hay or straw to begin building her nest.

Some does like to build their nests themselves, so on day 27, I leave a pile of hay in a pregnant doe's cage and let her do her thing. She then builds her nest out of the hay and her own fur.

When we first started breeding, we did not keep records of when we bred. Big mistake! Make sure to always write down when you breed your does, and leave a card attached to their cage or somewhere near her cage where she can't chew it. That way you can better plan when to offer her a nesting box and keep your eye out for the emergence of any baby bunnies. The last thing you want is for her to give birth on a cold, windy night and have no nest to keep her babies warm.

Although you may have heard that larger rabbits have larger litters, in my experience, it is not true. Our wild-bred doe is quite small, maybe only three or four pounds, but she has sizable litters of five to six kits.

4. If you're not picky about breed, you can get your rabbits for free.

Yes, it's true. We've gotten the majority of our wonderful breeding rabbits free from people who did not want them any more. Out of five does, four were free, and out of four bucks, two were free. If you wait, and if you're patient, you can certainly come across a bunny in need of a good home.

The caveat is that you cannot be picky about breed if you want to have a few breeding does and bucks quickly. (Although you should always be picky about health. If a rabbit is sick or appears in poor flesh, then you should decline.) But that being said, you do not have to spend a lot starting to farm meat rabbits, and I've had no trouble acquiring large, healthy rabbits for our breeding shed.

5. Rabbits can be very territorial.

Rabbits tend to be very territorial, and does are worse than bucks. In fact, does can be so territorial that another rabbit entering her cage can cause a lot of flying fur. Even does that used to be housed together can fight if separated for long periods. Our does began fighting, and during one disastrous event, a doe began attacking another doe's litter of newborn kits.

For a while, we started raising rabbits in a colony, but after some disastrous births, we began keeping our rabbits in separate cages. We can no longer keep any of these does together, and although they got along well previously, that

honeymoon is over.

Raising rabbits for meat is probably one of the most gratifying parts of homesteading. There are

always things you'll have to learn as you go along, but these rabbit facts will get you started in the right direction. 🐇

MAAT VAN UITERT is a poultry, livestock, and homesteading expert and author who helps everyday people achieve independence by teaching fans how to raise chickens, learn traditional skills, and become more self-sufficient. She is the founder and editor at her home and garden website *Pampered Chicken Mama*.



CLEAN. TREAT. HEAL.

A hand gently holds a small, fluffy yellow chick. In the foreground, a collection of Vetericyn products is displayed, including bottles of Liniment, Antimicrobial Poultry Care, Antimicrobial Wound & Skin Care, Antimicrobial Ear & Eye Spray, and Foam Care. A green 'New' sticker is placed on the Poultry Care bottle.

Vetericyn® makes the most advanced, effective, and safe products to keep your animals healthy. Whether it's treating skin irritations or eye and ear issues, conditioning and cleaning the coat, or nourishing a pet's vital systems, animal owners trust Vetericyn for total animal wellness.

Wound & Skin | Eye & Ear | Shampoo | Supplements | Mobility

Vetericyn® ANIMAL WELLNESS

Made in the USA | vetericyn.com



How the Bot Fly Causes Warbles in Rabbits

A Guide to Bot Fly Symptoms, Removal, and Treatment

BY JANET GARMAN

BOT FLY SYMPTOMS in rabbits show up after the *Cuterebra* fly deposits an egg on the rabbit's skin. It is one thing you should know about as you begin raising rabbits on your farm or homestead. Warbles in rabbits is self-limiting and usually not fatal. However, the symptoms can be both alarming and rather disgusting.

How Warbles Occur

Flies are a common nuisance in any area with livestock, manure, and moisture, but bot flies aren't your regular run-of-the-mill flies. The *Cuterebra* fly is a large insect, somewhat resembling a large bumble bee. It doesn't take many *Cuterebra* to cause a problem in your rabbits. The bot fly lays a single egg, either on the rabbit or on vegetation, where the rabbit's fur picks up the egg. The

egg hatches and the bot fly larva burrows into the rabbit's skin where it grows and matures. The larva feeds on secretions from the host. Pretty unpleasant, right? The rabbits don't seem to be bothered by the growing larvae although they might scratch at the site. Our rabbits continued with normal eating and activity. The first thing I noticed was a large cyst-type growth on one rabbit's back.

Our Journey with Warbles in Rabbits

I was familiar with the bot fly and the yellow sticky eggs, as they are a concern with other livestock. However, I did not think about this as the cause of the large lump growing on my older male rabbit. I assumed the poor old boy had some sort of tumor and would be leaving us shortly.

I kept a close watch to see if he was suffering, acting sick, and not eating, but none of those things occurred. Quincy continued to eat normally, play with his hutch mate, Gizmo, and do normal rabbit activity. I am not against taking a rabbit to the veterinarian, but Quincy was not acting sick! I thought maybe the abnormal growth was a benign cyst and not a malignant tumor. I never thought about bot fly larvae growing beneath the skin. Soon, the "growth" had gotten considerably smaller. I examined the lump and found it to be oozing fluid and pus. After cleaning the area and the wound, it was clear that whatever it was had burst and was draining. I had been taking photos all along to show to a veterinarian if I needed to take the rabbit to the vet's office. I remembered a friend who had been raising rabbits for many years. I showed her the photos and she suggested that I look up warbles in rabbits. The symptoms were exactly the same. We even had the distinctive round hole, where the larvae had crawled from the host rabbit. Yuck! Things continued to get even more disgusting. Warbles in rabbits are not for the faint of heart!

I did a lot of research and spoke to our veterinarian. He confirmed what I suspected so I checked the other rabbits. Gizmo had five small lumps but it was too soon to be sure they were warbles. Quincy had one other smaller warble. With my vet in agreement, I let the infestation run its course from this point. He could have done the extractions surgically in his office but we opted to carefully monitor both rabbits and perform twice-daily wound care. The holes are fairly easy to clean and treat if you can stand to do it yourself. I have a fairly high tolerance for grossness so I opted to do it myself. Treating the wounds is similar to treating a deep tissue wound or puncture wound. Keeping it clean and dry is key.

Why Does This Happen?

While sanitation and cleanliness are important when raising any livestock, fly issues can still occur. Even in

the best of rabbit care, situations can make us question our methods and caretaking ability. Conditions of extreme wetness at just the right time can give the *Cuterebra* fly the right situation to lay her egg. Although we cleaned the hutches regularly, added dry bedding, removed spilled food, and cleaned water bowls, we still had to deal with this bot fly attack.

After larvae burrow into the skin, it takes a while before you notice the developing growth. By this point, many bot flies may have laid their eggs on other rabbits in the area. Warbles in rabbits does not necessarily mean that you didn't keep the rabbit area clean.

Bot Fly Symptoms

Maturing larvae create a large, hard mass that looks like a tumor or cyst. You may notice a hole that the larvae are breathing through or it may simply be a soft, crusty area on the skin. The rabbit seems to not be bothered by hosting the creepy crawly larvae.

Bot Fly Removal

It is important that bot fly removal be performed by a veterinarian. If you squeeze and accidentally squish the larvae, it releases a deadly toxin which can send the rabbit into shock and result in death. Removal can require quite a bit of pulling, all the while trying to not squish it. It's best to leave that to the veterinary profession. As the bots prepare to emerge, the skin around the breathing hole thins out and gets crusty. At this point, I carefully checked twice a day, so I could immediately begin wound treatment and ward off further infection. Cleaning the area soon after the larvae exited made all the difference in the time it took for the hole to heal up and close over.

Treatment of Warbles in Rabbits

The hole left behind requires twice-daily care for the first week. If the wound was healing well, I then went to once-daily wound care. Keep the area clean and sanitary during the healing so you don't attract more flies. House flies will be attracted to the oozing fluids and you don't want to end up with a case of maggots or fly strike.

The products I use are commonly available.

1. Clean the area. Trim away any fur that is in the way, or that may get stuck on the drainage.

The wound should not bleed or may only bleed a little.

2. Flush the wound hole with a sterile saline solution. I flush, then mop up the fluids, then flush again. I try to flush out as much debris as possible to aid in healing.

3. I use a product called Vetericyn, sold in many pet supply or farm supply stores. I spray this into the hole and around the outside of the wound.



4. Last, I squeeze a good bit of triple antibiotic cream into the hole. (CAUTION: DO NOT use a triple antibiotic cream with pain reliever included.)

Warbles in rabbits is self-limiting, meaning it should clear up without major infection or complication. If the wounds do not heal and progressively get worse, seek the advice and care of a veterinarian. If you feel at all uncomfortable or ill-equipped to perform the wound care, consult a veterinarian. Everyone's comfort level in dealing with wounds and illness is different. You and your veterinarian can make this decision.

What Other Animals can Be Victims of Bot Fly?

Each species of livestock acquires a bot infestation in different ways. The bot fly often lays its egg on the grazing area and is eaten or inhaled by the animal. Sheep and goats are susceptible to nasal bots. In cattle, the large bot flies spook the cattle, causing them to interrupt their grazing. The fly lays eggs on the cow's lower legs. Larvae enter the body, migrate through, and many weeks later emerge on the back through holes they make in the skin. Bot flies in cattle are an economic problem, discoloring the meat surrounding the bot and making it unusable. Holes in the hide affect quality.

Horses experience bot fly eggs deposited on the lower leg also. When you see these, a tool known as a bot comb can help remove the sticky eggs. Horses ingest the eggs when they lick or bite them off their feet and legs. Other forms of bot flies lay the eggs on horse's nose or throat. The eggs hatch in the horse's mouth and burrow into the gums and tongue. The next place they migrate is to the stomach, where they hang out for many months. After almost a year, the bot exits in the manure, in the meantime damaging the horse's stomach lining.

Cats, dogs, rodents, and wildlife often contract the bot fly larvae by brushing by the egg after it is laid. While there are cases of bot fly infecting humans, the cases seem to be in underdeveloped countries. 🌱



A Guide to the Best Feed for Rabbits

BY MAAT VAN UITERT

ALTHOUGH THERE ARE VARYING opinions about what comprises the best feed for rabbits, there are a few rules of thumb you should consider if you want to raise healthy, happy bunnies. A feed that provides the right nutrients is a good place to start.

In particular, the best feed for rabbits will include the right amounts of vitamins A, D, E, and K. If your rabbit's nutrient intake is off, they might become lethargic, or a normally inquisitive bunny might become disinterested in human company. If you raise meat rabbits, you might find they're unwilling to breed.

Here's some general rules so you know how to identify the best feed for rabbits, as well as some hints to save money.

Commercial Feed

As a general rule, rabbits should have a feed designed for specifically for them. The best feed should have at least 15% protein, and be optimized to provide the right nutrients. You can find many options at feed stores, and if you go with any major brand, you can be

them anywhere from three ounces to eight ounces of feed each day. The University of Minnesota recommends providing two to three ounces per day for smaller breeds (such as dwarf rabbits), three-and-a-half to four ounces per day for medium size breeds, and four to eight ounces per day for large breed rabbits.

As a quick guide, a normal-size can of tuna will hold five ounces of commercial pellets for rabbits.

Hay

Rabbits should have an unlimited quantity of good quality hay. Timothy and orchard grass are good options. When you buy hay, any reputable dealer will

Rabbits should have an unlimited quantity of good quality hay. Timothy and orchard grass are good options.

confident your rabbits are getting the nutrients they need.

Depending on the size of your rabbits, you will want to feed

be able to tell you the type of grass is used to make their hay. Mixtures are a good option too, and some hay producers opt to grow more

than one type of grass to ensure an adequate harvest.

Alfalfa is also a good option for adult rabbits, although it's high in protein and can be very rich. If you have young rabbits, alfalfa also has the reputation of causing gastric upset, so you might consider avoiding it for kits.

To provide high-quality hay, I recommend purchasing square bales because they're easier to store and you will save money. In most areas of the country, you can purchase 40-pound bales for \$3-\$8, while a 10-pound bag of rabbit hay at a large store might cost you the same. Buy from a reputable dealer, and make sure the bales were stored inside and out of the rain so they're free of mold.

Unless you have a lot of rabbits and know you will go through it quickly, avoid round bales. Unless you've moved it to your property as soon as it was baled, there's a chance it's been sitting in the rain, and might be moldy. They're also difficult to transport without a tractor.

Rabbits should have hay continuously. If they lack enough

fiber, they can get diarrhea, or become disinterested in eating altogether. Rabbits also have a tendency to chew, and if they don't get enough fiber through hay, they might chew more than they would otherwise.

Other Feed for Rabbits

Rabbits should have a fair amount of fresh produce every day. Lettuce, carrots, apples, and cabbage are popular options with my rabbits, and they're some of the best feed for bunnies in addition to a commercial ration. Some owners like to give their bunnies bananas and apples. I like to buy a head of cabbage and cut it into equal portions so each of my rabbits has a piece, along with some apple which helps satisfy their desire to chew.

I also like to provide sunflower seeds for my bunnies. Earlier this year, we were having a hard time getting some of our meat rabbits to mate, and after some research, I found out it might have been caused by a vitamin deficiency.

I read that feeding sunflower seeds could eliminate this deficiency, and it certainly did!

Although I didn't believe it would work, we have not had a problem with our rabbits mating since, and now they get sunflower seeds mixed into their daily ration. And they love them! However, sunflower seeds should be used as a supplement, and not as a main feed for your rabbits.

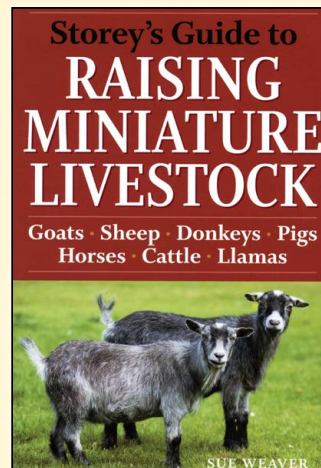
There are plenty of herbs that rabbits can eat, but cilantro is a favorite with my bunnies.

The best feed for rabbits starts with an optimized daily ration that meets their nutrient and mineral requirements as well as good quality hay. Using these simple rules, you will be able to raise happy, healthy rabbits. 



Storey's Guide to Raising Miniature Livestock

- Goats • Sheep • Donkeys
- Pigs • Horses • Cattle
- Llamas



The ins and outs of breeding, feeding, housing, diet, nutrition, exercise, disease prevention and treatment, and much more.

shop.iamcountryside.com
970-392-4419

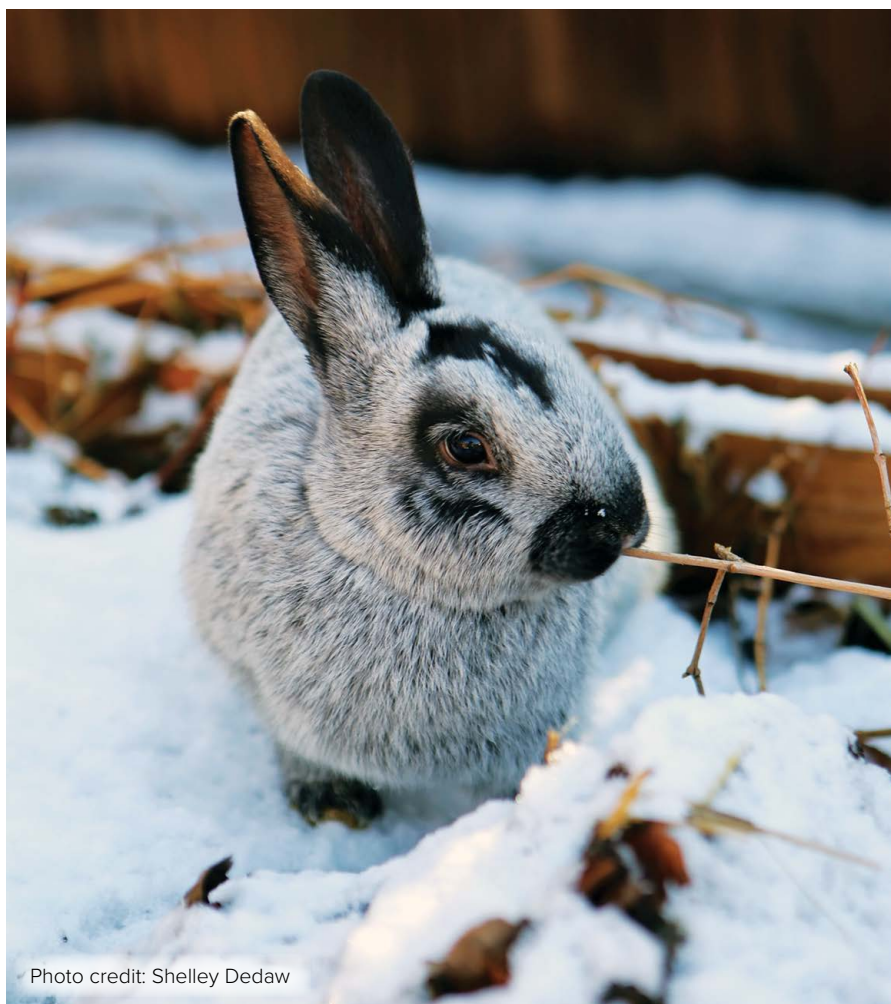


Photo credit: Shelley Dedaw

How Rabbit Farming Differs in the Winter

BY MARISSA AMES

WHETHER YOU'RE RAISING meat rabbits or rabbits for show, rabbit farming changes seasonally. What works in summer may not work in winter. And though rabbits are one of the easiest livestock to raise, precautions do need to be made.

Housing

Unlike many livestock, rabbits do better in 0-degree-F weather than

in 100 degrees F. Their fur thickens, their appetites increase, and they huddle together. But that resilience only goes so far.

A rabbit hutch needs to be sheltered on several sides during all seasons. In the summer it shades them from the hot and harsh sun. Winter rabbit farming requires protecting them from rain, snow, and the bitter wind. Many rabbit hutches already have wooden tops

and sides. If you have hanging or stackable wire cages, cover the top with a piece of plywood. Lay rigid material such as wood against the sides to block the wind. Allowing sunlight to naturally shine through one panel can help them warm up on clear but cold days. If a wet storm blows in through the open side of the rabbit hutch, gently dry the animals off with a towel.

Rabbit cages can sit within a closed shed during both summer and winter, as long as you provide adequate ventilation and lighting. Resist the urge to add space heaters because of fire danger. As long as you don't have baby rabbits, freezing temperatures are still safe.

If you choose to bunk rabbits together so they can keep each other warm, don't mix males and females that have reached breeding age. Two mature females may fight but they rarely harm each other. Mature males will fight and damage ears and eyes. Also, do not place additional rabbits into a cage with a mother and babies because she will defend their territory.

Additional protection can be provided by wrapping an old quilt around a stack of cages or by making a hanging canvas barrier. But remember that rabbits chew anything that touches the side. Never put material that may harm the rabbits near the wire. Plastic is a poor choice for this reason, unless it is far enough away that the rabbit will not eat it.

Do not let feces back up into the cage because it can stick to the rabbits' feet and freeze. Keep the wire clear so both urine and droppings can fall away without leaving moisture that can cause frostbite.

Food and Water

Rabbits stay warm two ways: with their fur and their metabolism. If water freezes, they won't eat. Soon they won't have one of their two heat sources.

One of the easiest ways to ensure rabbits have fresh water is to keep two to three bottles per cage. When one bottle freezes, switch it out for another. During exceptionally cold months, rabbit farming may mean switching water out every hour. It's easier to change out one bottle and let it thaw while the rabbit drinks from another than to bring a single bottle in and take the time to melt the ice before allowing rabbits to quench their thirst. Another reason to keep additional bottles is because frozen rabbit bottles shatter when dropped. The middle of winter is the wrong time to run short on functioning bottles.

Some people experienced to rabbit farming switch to metal crocks during the winter because the metal does not break when ice expands. Frozen crocks can be placed in a bucket of warm water until the ice pops out. The crock is then refilled with fresh water.

What to feed meat rabbits depends on how much money you want to spend and what you have around. Either way, they need more than what they consume during warm months. Keep commercial rabbit food as their main sustenance, protecting it from moisture in a covered container. Do not feed greens to baby rabbits but they are acceptable for adults, especially if they are nutritious leaves like kale and clover. Only feed a few treats, such as greens and carrots, because balanced feed provides the right nutrients. Always keep food available. Never feed anything with mold on it.

Breeding and Babies

Rabbits may not "breed like rabbits" during certain seasons. Like poultry, they are ruled by the sun. When the days are longer they are naturally more inclined to breed. Some does may be receptive without intervention but some require that you supplement with a light until 9pm or 10pm.

Rabbit cages can sit within a closed shed during both summer and winter, as long as you provide adequate ventilation and lighting.

Avoid kindling in the hottest or most frigid months with timed breeding. Does are more welcoming in the spring and fall anyway. If you are rabbit farming for meat, plan most of your batches during the most agreeable months so your freezer is full by the time January rolls around. Then you can let the does take a break during a season that may be dangerous for her kits.

New mothers may neglect to pull hair before kindling. Or they may give birth on the wire. Unfortunately, unless you get to the kits in time, there's not much you can do. If you find a new batch of unprotected babies, bring both mother and kits inside. Gently pull hair from the mother's underside and line the nest. If the kits are too cold, they will need to be warmed. Some people place the nesting box beside a furnace or wood stove. Probably the safest way to warm kits is against human skin, such as within a woman's bra. Be sure the kits' noses are unobstructed so they can breathe.

People experienced with rabbit farming will tell you, "If it's cold enough for water to freeze, it's too cold for baby rabbits." Straw bedding and the hair pulled by the doe will keep naked newborns warm in the chilly springtime but not in the winter. If temperatures drop below freezing, kits must be kept in a shed or a house.

If you bring does into a house to kindle, keep them in the coldest room, such as a garage or basement. This allows both does and kits to easier acclimate when they have to go back outside. Keep kits inside until they are fully furred, between one to two weeks. Put them back outside during warm spells. Add extra bedding to nesting boxes so the kits can burrow down, but do not add manmade material such as cloth or quilt batting because this can tangle around kits' necks and bodies. During the first few nights outside, you may choose to add additional protection by wrapping quilts around the cages.

Check rabbit hutches frequently. Often a kit can latch to a doe's nipple then fall out of the nest when the doe leaves. Does rarely look for kits and put them back into the warm bedding. Shine a flashlight around all sides of the nesting box to search for kits. If you find one that has gotten very cold, gently warm it. But if the kit is just a little chilly and there are more babies in the nest, the heat from its siblings is usually enough to warm it back up.

Rabbit farming during the winter only requires a few changes but those differences can be crucial. Keep them sheltered and always have fresh food and water available. After a while you will realize it's not difficult. ©

Senior Editor for Countryside Publications, **MARISSA AMES** runs a small homestead in Fallon, Nevada, where she focuses on saving and propagating rare poultry and goat breeds. She teaches homesteading skills for her local Grange chapter. Marissa and her husband, Russ, travel to Africa where they serve as agricultural advisors for the nonprofit I Am Zambia. She spends her free time eating lunch.



Rabbit Cages or Colonies: Which is Better?

BY MAAT VAN UITERT

IF YOU WANT TO TRY your hand at raising rabbits for meat, fiber, or as pets, you'll have to decide whether to keep them in rabbit cages or in colonies. Both have their benefits as well as their pitfalls. I've used rabbit cages and kept bunnies in colonies. While rabbits benefit mentally from colonies, and can certainly live a life similar to their wild cousins, using large rabbit cages to partition the animals is safer.

Ensuring the safety of your animals is important to every owner. But particularly if you're keeping rabbits as working livestock for either meat or fiber, then giving them a safe place to birth and keeping them free of tussles with their neighbors is paramount.

Let's look at the advantages and disadvantages of colonies versus rabbit cages.

RABBIT COLONIES

Rabbit colonies do have many advantages. Rabbits require a living area three to four times their size, and in a rabbit colony, this space requirement is easier achieved. Your bunnies are free to move about a bigger space and can interact with other rabbits as they might in the wild. Rabbits have complex social hierarchies, with several smaller groups coalescing into one warren (group of rabbits). Living together in a colony allows them to indulge in this natural behavior.

To some extent, raising rabbits in colonies might reduce your

workload, since you are not required to clean individual cages (although you still have to clean their living area in a colony).

There are some disadvantages to colonies that anyone thinking about raising meat rabbits or fiber rabbits should know about. When housed together, I found that our does, in particular, got into more territory disputes than I had bargained for. After several bloody ears and mornings finding fur everywhere, I decided colonies were not for me.

Rabbits will mate to establish social dominance, and between males, we found this to be a particular issue. One male kept hounding another to the extent that neither were eating, and their constant running disrupted the

rest of the warren. Because does sometimes prefer one buck or another for mating, simply having only one male is not an option at times, especially if you're breeding rabbits for a constant supply of meat.

RABBIT CAGES

Like colonies, keeping rabbits in individual cages has its advantages. Although rabbits kept in a smaller area might have less room to move, I've found individual cages let territorial does establish their own territory without having to fight it out with another bunny.

Feeding, although more labor intensive with individual cages, became a more streamlined process that reduced health issues since I could make sure everyone ate the right amount of food. When we started raising rabbits together in colonies, we found that does would bully each other. To defend herself, the less-dominant doe would hide, forgoing her meal that day — not a good way to raise rabbits! If you're wondering what to feed meat rabbits; a good commercial grain is a great place to start.

Problems with Breeding

I also found that by using rabbit cages, sometimes also referred to as rabbit hutches, I could better control breeding. In a colony, does and bucks could breed indiscriminately; for the owner, this has certain advantages because it's less labor intensive. Does can pick the bucks they like, and take care of the birthing and nesting process themselves. Barring a big issue, an owner can raise rabbits in a relatively hands-off way in colonies.

But every coin has two sides, and in this case, I found that indiscriminant breeding led to losing more litters. Keeping a record of breeding dates means that you can help the doe better prepare for her new arrivals. This is particularly an issue in winter, when it's harder to provide a warm enough area for

I've found individual cages let territorial does establish their own territory without having to fight it out with another bunny.

the kits. After losing litters to the cold, even though we provided enough hay and the mother did her job by filling the nest with fur, I decided it was time to keep better track of conception dates.

By housing my bunnies in rabbit cages, I can better prepare for kits by making sure my doe has a nesting box available (since rabbits pee and poop everywhere, leaving a nesting box in the cage is unsanitary for newborns). I can also ensure that she gets extra feed while she's lactating; in colonies, I could not guarantee it, especially if it was a less dominant doe.

Since using rabbit cages means my bunnies socialize with me every day, I found that I can also keep a better eye on the kits. The rabbits are used to me touching them and aren't as territorial when I check on the kits.

As a happy medium, since the mental health of our rabbits is important, we keep our rabbits in individual cages but still allow them the opportunity to see and touch other rabbits through the wire. I also give each rabbit daily attention so they're even less socially isolated. 🌱

Considering Homeschooling?

Succeed in homeschooling with curriculum designed for independent study.



1-800-776-0478

Ask for a free curriculum catalog.



CHRISTIAN LIGHT
EDUCATION

CHRISTIANLIGHT.ORG/HOMESCHOOL

Diagnosing Snakebite Symptoms in Horses and Livestock

BY HEATHER SMITH THOMAS



HORSES AND CATTLE are sometimes bitten on the leg if they walk over a snake and startle it, but if they are curious and approach the snake they are often bitten on the face. Pit vipers are the most common poisonous snake in the United States. These snakes have heat-sensing organs on their heads that help them locate prey. This group of snakes includes rattlesnakes (most common in western states), copperheads, cottonmouths, and water moccasins (more common in Midwest and South).

The danger/potency of a snakebite often depends on the amount of venom injected by the snake and type of toxins in the venom which can vary depending on species of snake. Most of the toxins affect muscles and blood vessels.

Rattlesnake venom contains a toxin that creates rapid swelling, pain, and bleeding at the bite site, and another toxin that damages blood vessels. The poison's damage is often relative to the size of the animal. A large animal like a horse or cow will often recover without complications from rattlesnake bites unless secondary infection develops. A dog, calf, foal, or child may experience severe snakebite symptoms and have serious complications. Rattlesnakes kill small rodents by immobilizing them with toxins. This causes them to die quickly, enabling the snake to eat them.

The toxins (and amounts of each) can differ in various bites and have different effects, but any bite can have serious complications if the bite becomes infected. Some of the worst cases are bites on the nose or face. Swelling may shut off air passages, making it difficult to breathe. The exertion of being herded or caught for treatment may make it even harder to breathe, and the increased heart rate from exertion may spread the toxin.

It's usually easy to diagnose snakebites, especially on the face or muzzle. A snakebite on a foot or leg can make the animal lame, and lameness and swelling might be mistaken for foot rot or a badly strained/sprained joint or even a broken bone.

Treatment

Cattle often recover without treatment and have more chance of survival than a horse when bitten on nose or face, since they can breathe through the mouth. Horses are more likely to suffocate. Swelling is the first symptom that will affect the animal. If you notice the bite when it is just starting to swell, you can insert a piece of hose or flexible tubing into each nostril.

Horses often get bitten on the nose because they are curious and approach the snake to smell it or see what it is. One veterinarian says the first thing he does when he goes on a call to see a horse that's been bitten on the nose is to try to open the airways with whatever he has. One time many years ago, he sent the farmer's wife to get her hair curlers — the pink foamy kind. He shoved the curlers up into the horse's nostrils to keep them open, and the horse survived.

If the swelling is too advanced and airways are already squeezed shut and the animal can't breathe, an emergency tracheostomy is necessary. It's best if this can be done by a veterinarian, but if a veterinarian can't get there in time and the animal is going to die, you can try to do it.

With a clean, sharp knife, make a vertical incision through the skin, along the windpipe, right in the middle of the throat — so you can get down to the cartilage rings of the trachea (similar to the ribs in a vacuum cleaner hose). Then use your fingers to open that slit a bit wider side-to-side so you can make a stab incision between the rings. If that's not enough of a hole to let air go in and out, cut in a small circle, removing a portion of the cartilage ring to make a bigger hole. Often a pocket knife stab is enough between the rings to get it open for air flow. You can slip a small piece of hose or tube into the hole to keep it open.

A bite on the leg is usually not as serious, depending on where it is. The higher up the leg (near armpit or groin) the worse it might be. Toxins can then get into the bloodstream quicker, with more risk for anaphylactic shock. Toxins may also rupture red blood cells, and lead to organ failure, starting with the kidneys.

Usually what you see first is localized swelling from the bite. It may progress along the leg in the soft tissues. Your vet may have to surgically remove the dead tissue

and get down to healthy tissue, and clean the wound.

Treatment for snakebites is aimed at reducing the swelling and inflammation and may include anti-inflammatory drugs. Ice packs or cold packs can help reduce swelling and inflammation. Corticosteroids such as dexamethasone are often used, to decrease the risk for anaphylaxis (severe allergic reaction and shock). Non-steroidal anti-inflammatory drugs like bute (phenylbutazone) or Banamine are very beneficial for reducing swelling and inflammation.

Be aware that when you give a cow steroids in late pregnancy, there is high risk for abortion. Corticosteroids don't seem to have the same effect on pregnant mares, and depending on the case, are often used on horses with snakebite symptoms.

DMSO (dimethyl sulfoxide) will also reduce the pain, swelling, and inflammation. DMSO gel or liquid can be rubbed over the area that's swelling. If the animal was bitten on the face, having trouble breathing, DMSO can also be given orally — mixed with a little warm water and squirted into the back of the mouth where it is rapidly absorbed and can keep the air passages open by halting tissue swelling. DMSO does a good job as an anti-oxidant and anti-inflammatory but it is also a penetrant and could take the toxin deeper into the tissue. Be careful how you use it.

The main goal in treating snakebites is to keep the toxin isolated and minimize spread. Confine the animal so it won't be moving around. Decreasing activity can slow down the spread of toxin by decreasing blood flow. A big dose of rattlesnake venom presents the risk of going systemic and causing organ failure after it gets into the bloodstream.

Antibiotics are often recommended, to minimize secondary bacterial infection from the affected area, especially if there's a lot of tissue damage. A bite with a lot of muscle toxin can cause necrosis in a large area. The secondary bacterial infection from a dirty bite (with a lot of necrotic tissue) may kill the animal, especially if you didn't find it early. If the animal is septic and ill, it will definitely need antibiotics.

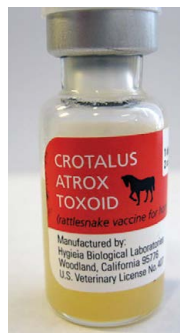
Snakebites often become infected, and this can be more dangerous than the bite itself. There usually isn't enough toxin in the venom to kill a large animal, but a serious infection may get started because of contamination from bacteria that enter with the bite;



the dying tissue makes an ideal place for bacteria to multiply and send toxins into the bloodstream. If this type of infection (blood poisoning) is not treated promptly, the animal may die. Many veterinarians recommend broad-spectrum antibiotics until any possible infection is controlled. Tetanus antitoxin is also a good idea (especially for a horse or pet) if the animal's tetanus shots are not current. If the bite is several days old before discovery, there may be a large infected swelling that should be lanced and flushed.

Snakebite Vaccine

The vaccine is for before the bite. If you fear your dogs might get bit, there is a snakebite vaccine available for them. More recently a vaccine for horses became available, which is intended to protect the horse throughout the summer from effects of rattlesnake venom. The dose is important; you want to achieve a high enough antibody level to protect the animal, based on its size. The smaller the animal, the more at risk it will be.



The recommendation when vaccinating horses is to start the first year with three doses (a few weeks apart) and then a booster every six months if you live in areas like parts of Texas and southern California where rattlesnakes are out year-round and never go dormant.

If owning a horse in northern areas where snakes are out for only a few months in summer, give a booster once a year — about a month before snakes start coming out. This gives horses enough time to ramp up immunity and be fully protected by the time they come into contact with rattlesnakes.

This vaccine was created specifically against venom from Western Diamondback rattlesnakes and is most effective against this snake's venom, but since venom from many other rattlesnakes is similar, this vaccine may also provide protection against venoms of the prairie rattlesnake, great basin rattlesnake, northern and southern Pacific varieties, sidewinder, timber rattlesnake, massasauga, and copperhead. This vaccine does not provide much protection against venom from water moccasin (cottonmouth), Mojave rattlesnake, or coral snake, however, since their venom is different. ©



HORSE HOOF ABSCESS TREATMENT

Learn How to Identify and Treat Horse Hoof Problems

BY HEATHER SMITH THOMAS

YOUR HORSE IS suddenly lame, with heat and swelling above the hoof. This might mean an abscess — a pocket of infection putting pressure on surrounding tissues — and require treatment. There are two types of abscesses: superficial abscesses that involve tissues just under the horn — beneath the hoof wall, the frog, or sole — and deep abscesses that involve deeper structures of the foot such as bones, joints, bursa around the joints, and sometimes tendons and ligaments. These are often more complicated to treat.

CAUSES: Hoof abscesses have multiple causes including punctures from sticks, glass, nails — such as fence-board nails or misdriven farrier nails — or some other foreign body. Sole bruising, such as serious stone bruises, can also result in abscesses. Hoof horn

defects or distortions can cause separation between the wall and sole, and if debris gets into that separation, it may cause an infection that travels up the white line between the wall and inner tissues, to eventually break out at the coronary band. Underrun, squashed heels can become abscessed. Poor hoof conformation, with extra strain and stress on part of the foot, can weaken the structure and lead to an abscess.

Foundered horses may abscess; chronic founder leads to a flat sole that is more susceptible to bruising. Any flat-footed horse is prone to bruising when ridden on gravel or rocky terrain. If the bruise is severe, there is damage to tissues inside the sole, and serum accumulates in that area. Serum and damaged tissue make a perfect environment for bacteria to multiply and create an abscess if they gain access to that area.

TREATMENT: Regardless of the cause, basic treatment for any hoof abscess is the same — after you determine the cause and try to correct it. If a foreign body (such as a nail, stick, or sharp rock) is still in the foot, you need to pull it out, for instance. You won't clear up an abscess until you get rid of the initial cause.

You also have to establish drainage. Locate the abscess, open it up, get rid of the pus, and get medications into that area. Many hoof abscesses are under pressure, because of a buildup of pus, and pressure causes a lot of pain. It's like a swelling or infection under your thumbnail or toenail; it hurts excruciatingly because it can't expand. The swelling is encased under a solid structure.

It's important to establish adequate drainage, but this should be carefully done so you don't interfere very much with the integrity of the hoof. If you make a huge hole, it takes longer for it to heal and close up.

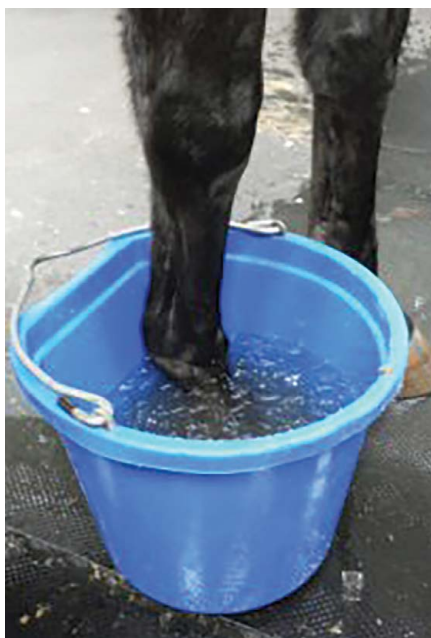
It's often a fine line between what's adequate (to allow proper drainage without the hole closing up before all the infection is gone) and too much. If you are unsure, have your veterinarian do it. He/she will be thorough — so that everything drains away and the infection clears up — but will create a small enough hole that it can heal quickly.

Once the infection is opened and drained, it should be soaked daily for 20 to 30 minutes for a few



days, to draw out any remaining pus, so the area can begin to heal. Use of a soaking boot or standing the horse with his foot in warm water and Epsom salt work well, but some of the newer antiseptic soaking compounds (like chlorine dioxide) work even better than Epsom salt. With a deep abscess, your veterinarian may recommend systemic antibiotics to battle the infection from both outside and inside. A wound spray can be squirted into the abscess hole after draining and soaking, applying it each time you finish soaking the foot.

With proper treatment, most hoof abscesses — if adequate drainage is established and you can get proper medications to the site of infection — clean up and do well in a few days. The horse is usually much less lame by the second day, with the pressure relieved, and it's just a matter of making sure there's no infection left in the hole. If the horse is not healing up and doing well within a week or two, there's an underlying problem (more than just an abscess) and it's not going to heal on its own. You need your veterinarian to find out what's at the root of the problem.



DEEP PUNCTURE WOUNDS: If your horse steps on a nail (if a board comes off a fence or some other structure) or some other sharp foreign object, contact your vet. You may need an x-ray of the foot while the foreign body is still lodged there — to know exactly how deep it went and which structures it may have injured. If it's not still lodged there, the veterinarian may squirt opaque material into the puncture, which will show up on x-rays, giving a picture showing the path of the nail.

It's best to do this immediately. If you simply try to soak the foot for several days and the foot keeps getting worse, it becomes a surgical issue, where the veterinarian has to lay the horse down under anesthetic and remove the dead tissue. At that point, it becomes a life-threatening condition.

They will anesthetize the horse and do a roto-rooter type of surgery, figuring it's safer to cut a nice clean hole in the foot rather than waiting to see if the horse develops an infection. By the time an abscess forms, it may be a lot more serious. If the horse's tetanus protection is not current, he should immediately have a booster shot.

PROTECTING THE AREA: After you've opened and drained the abscess, you need to bandage the foot to protect the hole between soakings. Once it's no longer sore, you may want your farrier to put on a shoe (if the horse is barefoot) and a pad to help protect the foot, or use a hoof boot.

If the horse's sole or frog is tender because you had to open up an abscess and there's a hole there, he won't want to stand on it. But if you protect the tender area, the horse will bear weight on it more readily. Weight-bearing and walking around really increase blood circulation in the foot and facilitate quicker healing.



If a stone bruise abscesses and you had to make a hole in the sole for drainage, it takes a while for the sole to regrow and the hole to fill in. The infection may be gone within a few days, but without protecting the area you may not be able to ride the horse for weeks or months while waiting for the sole to regrow. The foot is perfectly sound, but the horse can't be ridden in rocky terrain because of the sole's vulnerability. If a shoe (or shoe with pad) can cover the hole, the horse can continue work while the sole regrows.

If you aren't riding the horse, some of the new hoof boots are helpful to protect the horse's foot. Some people still use padding like baby diapers (on the bottom of the foot), taped on with duct tape. This will protect the hole in the sole from mud and dirt but is not enough protection to allow the horse to be ridden.

If the abscess is extensive and the vet had to dig deep into the foot, ending up with a large hole, he/she may apply a shoe with a treatment plate — a piece of thin metal or aluminum attached to the ground surface of the shoe with screws — to allow access to the bottom of the foot for any additional horse hoof abscess treatment or to allow for checking on the hole in the sole while still protecting it from external contamination and trauma. 🐾



Dog Vision

BY STEPHENIE SLAHOR, PH.D.

CHECKING OUT THAT NEW DOG FOOD, looking for the leash, diving down onto a favorite toy, or searching for someone in the house — all ways your dog uses the senses of smell, hearing, touch/texture, taste and, of course, vision.

But did you ever wonder just how your dog sees the world? It may be different from the way we humans see, but because we're not dogs, we don't really know exactly what goes on. However, based on what we know about how the eyes and brain work in humans, it gives us many clues to how dogs may perceive things in their environment.

We measure "good" vision in humans at 20/20, which means we can clearly see things 20 feet away. But we think dogs have 20/75 vision which means they probably must be 20 feet away from something a human could see from 75 feet away.

This may vary from individual to individual and may also differ among breeds of dogs because it is thought that Rottweilers, Schnauzers, and German Shepherds

may be more nearsighted than other breeds.

Humans and dogs are both hunting "predators," rather than hunted "prey" animals, so the eyes are to the front of the face, not along the side, such as squirrels, rabbits, birds, and other prey animals have.

This helps the predators to see forward clearly, to detect motion, locate prey, and hunt, but it also somewhat limits peripheral vision. Prey animals see in many directions at once, the better to be able to see an approaching predator and generally to have much better peripheral vision than the hunters.

Dogs' eyes are about 20 degrees apart, not straight forward like human eyes. So, dogs probably have better peripheral vision than the field of view humans would have. That field may be 60 to 70 degrees wider than a human's peripheral vision, with humans

having about 190 degrees field of view, but dogs having about 250 degrees for their field of view. That also increases a dog's binocular vision in which the

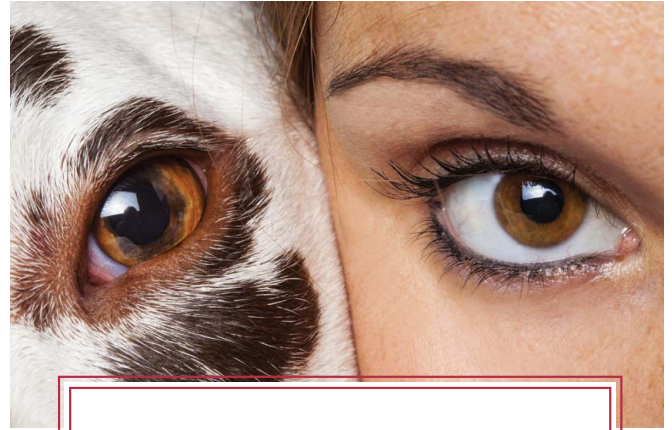
Dogs have 20/75 vision which means they probably must be 20 feet away from something a human could see from 75 feet away.

field of view from each eye has an overlap to help the dog judge depth and to decide how to jump or catch, but this perception of depth may be less than human eyes have. The best depth perception probably happens when the dog is looking straight forward. Being able to see moving objects better than stationary objects is a valuable asset to a predator and one reason why a dog can learn to respond to consistent arm and hand cues from the owner/handler, rather than having to hear a voiced command to do a particular action.

Besides sightedness and peripheral vision factors, we know that eyes are composed of rod cells and cone cells. The rods see motion, and the cones perceive color. Rods also govern the ability to see in low light conditions. Because dogs have only about 10% of the number of cones of humans and many more rod cells, dogs see well in the dark, using light that is even five times dimmer than what the human eye would need — again, something quite convenient for hunting at night.

What colors a dog can see is debatable, but most research indicates that yellow, blue/blue-violet, and gray are within the dogs' ability to perceive. Comparing this to human capacity, dogs would be what we'd call "red/green colorblind" in humans. Red, to a dog, may look like a shade of yellow, and green may appear to be light gray or white. This results in our creating most agility equipment colored in blues and yellows so that the dog can see the contrast and know where to enter/exit an agility see-saw, obstacle, tunnel, etc.

The retina of an eyeball is the light-sensitive part of the eye and is located toward the back of the inside of the eyeball. Like sharks, alligators, rats, owls, rabbits, bears, deer, opossum, kangaroos, and so many more animals, dogs have a tapetum lucidum or reflecting layer in the eye that glows or reflects if light enters the dog's eye. The color of the reflection may glow red, orange, green, white, or yellow, depending on the species of animal, the color of the light being shone on the animal's eye, the size and shape of the retina, the distance from the viewer to the animal, and the angle from which the animal is being observed. That reflection adds more light and detail to the retina so that the animal can see better in the dark, rather than be limited to just one pass of light through the retina at one time. The result is seeing better and further when it's dark. Humans don't have this capability even though we do have light sensors, thanks to rhodopsin in the eyes, but not enough to let in too much more light. Sometimes, humans reflect a red color in their eyes — something you may have seen when taking a flash photo of someone, but that's not due to a tapetum lucidum. It's just because of the blood vessels in the eyes' retinas.



What colors a dog can see is debatable, but most research indicates that yellow, blue/blue-violet, and gray are within the dogs' ability to perceive.

Guide dogs might not be able to distinguish a red light from a green light at a traffic signal, but they can look at the brightness and the position of the light on the signal, and watch the flow and hear the noise of the traffic to determine when it is the correct time to cross a street.

Some dogs develop cataracts and vision problems in old age. Still, because they depend on all their senses, not just vision, they can do well with limited sight. This is if the owner makes appropriate and necessary adjustments such as fencing and securing the yard in which the dog can wander and exercise, removing objects in the dog's regular pathways in the house and yard, taking leashed walks, and avoiding stairs. In other words, keep the access ways comfortable for the dog.

And there's a "look" at how your dog sees! 🐾

DR. STEPHENIE SLAHOR'S farm and ranch background includes cattle, horses, mules, donkeys, dogs, cats, sheep, goats, rabbits, birds, chickens, geese, turkeys, and tortoises — but not necessarily all at the same time! She would be one of the first to agree that, indeed, "Variety is the spice of life!" Her degrees are a Ph.D. and a J.D., which, she says, "cost a fortune in time and money, but well worth it!"

TREATING A DOG PAW PAD INJURY

BY JANET GARMAN



A DOG PAW PAD INJURY can come from many types of mishaps. Scrapes, cuts, punctures, blisters, and burns are some of the ways an injury can present. A dog's paw pad is a unique type of tissue and structure. The paw pad on dogs and cats consists mostly of a thick fatty tissue layer.

The fatty tissue provides insulation from the cold, allowing the dog or cat to walk on cold ground. Barn cats in winter have the ability to walk on ice and not get chilled because the fatty layer along with the increased blood supply in the footpad helps their feet stay warm. There is plentiful blood supply to the paw pad.

The pads provide protection from ground surfaces and take on the wear and tear from walking and running. The paw pads are sensitive to different ground surfaces, which helps the dog know what type of ground cover is present. Dogs that spend most of their time outdoors

will have rougher paw pads. Dogs that work on a farm have more potential for an injury than the household companion, although wounds can happen to both house pets and working dogs.

Cuts or lacerations are common if the dog or cat steps on broken glass, metal, sharp stones, or any other sharp material. The situation requires immediate care, in order to promote full healing. Animals on the farm find all sorts of ways to get injured and some injuries are specialized. Doing a foot inspection every few weeks won't stop an injury from a cut or from happening. It might, however, allow you to prevent a small cut or infection from becoming a bigger problem.

Signs and Symptoms of Cat or Dog Paw Pad Injury

- Bleeding
- Limping
- Unwilling to put any weight on the sore foot

- Discolored foot pad
- Excessive licking of the foot pad

What you may Find on Inspection of the Foot Paw Pad

- A growth or mass on the foot or under the foot pad
- Paw pad is torn off
- Paw pad is badly scraped
- Paw pad is burned from chemicals or hot pavement
- Paw pad has a deep cut
- Paw pad has a mild abrasion

What Should you do for a Dog or Cat Paw Pad Injury

With a dog paw pad injury, first consider getting veterinarian treatment for the dog or cat. Since the paw pad is a specialized structure, it is important that any wound heals the correct way. Infections and further complications from a dog paw pad injury are well documented.

If you cannot get your pet to the veterinarian, there are some things you can do in the meantime. These procedures are offered as a means to get your dog or cat some relief. If the wound is serious, please consider getting medical advice for the animal.

- Clean the area using antibacterial soap.
- Stop the bleeding using pressure applied to the area.
- Inspect the wound for glass, metal fragments, thorns, burrs, and other debris. Removing the objects with tweezers is best. If there are tiny pieces of debris, wash the wound out using a syringe and antiseptic wound care liquid.
- Disinfect the area with a wound or surgical scrub like Betadine.
- Apply an antiseptic wound spray or ointment. We use Vetericyn on our farm for first aid to injuries and infections.
- Bandage the foot and lower leg. Use a non-stick gauze pad and vet wrap which provides a cohesive bandage. The paw pad sweats, so

keeping the wound from being damp from sweat is important. The foot pad injury should be allowed to heal from the inside to the outside. This allows the same type of epithelial tissue to regrow on the foot pad.

In some cases, the dog or cat may try to remove the bandage. Some people have success using a bitter apple type of spray to discourage chewing. Using an Elizabethan-type collar may prevent the pet from reaching the foot to chew on it. Discourage chewing and licking while the wound is healing.

Since the animal will be walking on the bandage and putting some pressure on the wound, check the injury daily. Clean and reapply a clean bandage every day. If the wound is seeping or deep, you may need to do this procedure more often.

What to Do if the Paw Pad Is Removed or Torn Off

Gently clean and examine the foot pad area. This is a serious condition and it should be treated by a veterinarian. In the meantime, clean and dry the area. The foot pad skin should be allowed to regenerate from the inside out. Use non-stick bandages and vet wrap. In some cases, a vet will need to add a drain to the area while it heals.

Other Types of Dog Foot Injuries

The foot can be injured in other ways besides the pad. Thorns can get in between toes and bruising can occur from running on rocky surfaces. During winter weather, ice can accumulate in between the toes of heavily furred dogs. This ice is irritating and painful to the dog. Applying a lubricant like Vaseline will prevent the ice from sticking to the dog's fur and feet. Tumor growth can occur, infections can



start, and toenails can be ripped off. For farm dogs especially, some seeds can get lodged in the foot, between toes, under toenails, or somewhere else, causing pain and inflammation. Not all dog and cat foot injuries will involve the paw pad. Gently inspect the sore foot to determine if a veterinarian should be consulted. Take the steps outlined above to begin first aid. Prevent some of these foot problems by keeping the hair trimmed between the toes.

Preventing Dog Paw Pad Injury

Inspecting the ground whenever possible will help avoid some injuries. We are farming an old piece of family land. We still find pieces of broken glass and metal in the fields, from some other caretaker long ago. This debris tends to resurface after rains and seasonally after thawing. In the hot summer weather, keep your dog away from cement and pavement that may be extremely hot. Dog and cat paw pads can burn easily on hot pavement. ©

Best Natural Fertilizer On Earth

"Chicken Soup for the Soil® improves your soil by feeding the microbes and supplying all the nutrients most fertilizers neglect."

- ✿ Grow higher quality fruits & vegetables with more color, better taste, less bug infestations & disease.
- ✿ Sea nutrients contain all the elements in the periodic table.
- ✿ 100% toxin free & bioavailable.
- ✿ Non leaching / nutrients accumulate over time.
- ✿ Promotes a healthy soil ecosystem.
- ✿ Perfect for fruit, vegetables, & fruit trees.



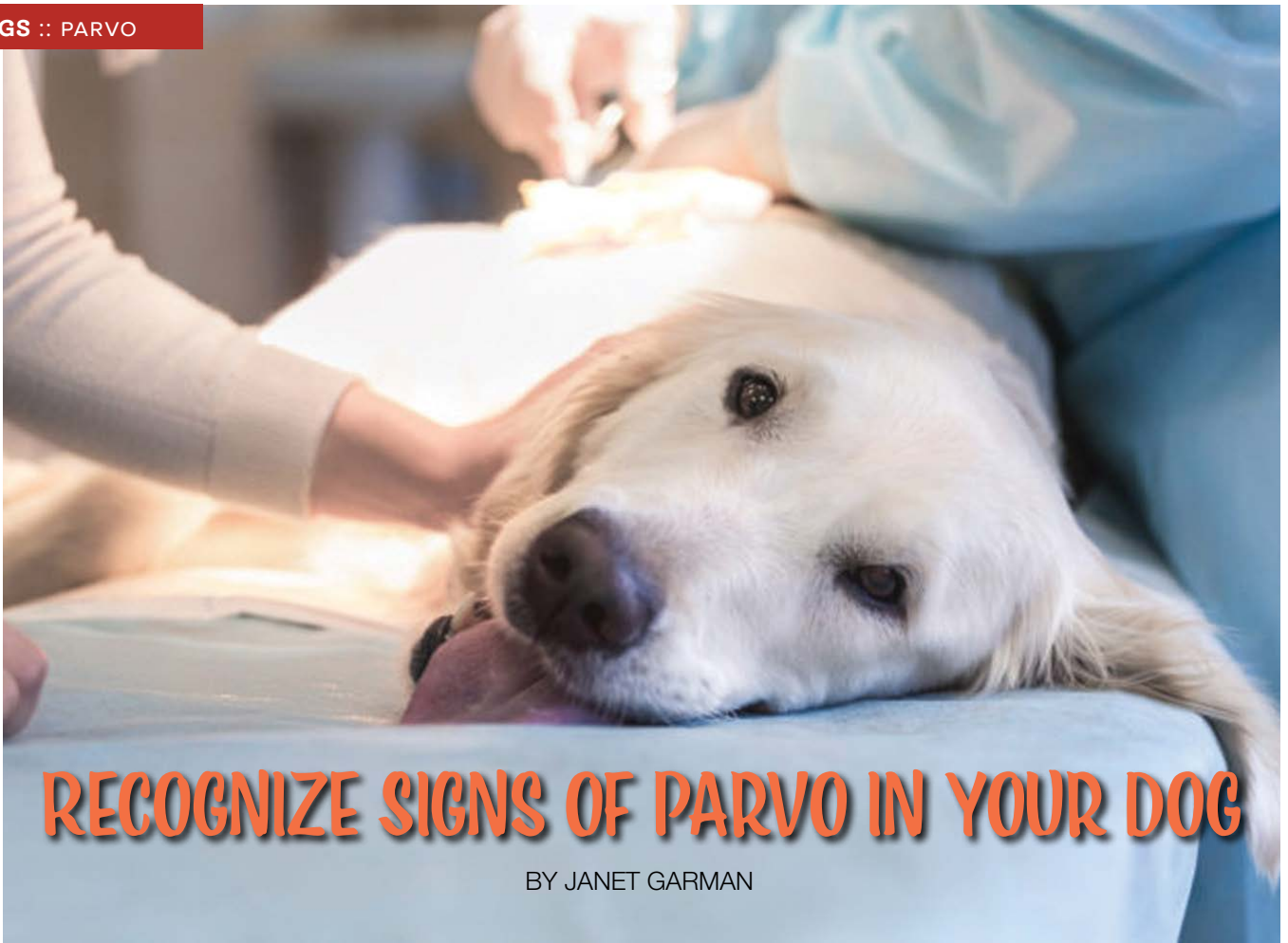
**64oz Jug
29.95***

+ Free Shipping!!

***Makes up to 128 gallons with
1 tablespoon per gallon.**

***Commercial quantities also available.**

www.DrJimZ.com



RECOGNIZE SIGNS OF PARVO IN YOUR DOG

BY JANET GARMAN

QUICKLY RECOGNIZING SIGNS of parvo in your dog greatly increases his chance of full recovery from this fast-spreading virus. Any unvaccinated puppy or mature dog is susceptible to a parvo outbreak. The virus is everywhere in the environment. It is not hard for a dog to come in contact with canine parvovirus type 2 and quickly become seriously ill. As an owner, what do you need to know to seek treatment in a timely manner?

What is parvo in dogs? Parvo is an extremely dangerous, fast acting, debilitating virus. There are various species-specific strains of parvo. Most strains are limited to the species they infect, but the dog parvo has been known to spread to cats.

Recognize the Signs of Parvo

First of all, there is an incubation period with the virus. This is the time between when the dog comes in contact with the virus and when the dog shows signs of illness. Contact can be from dog to dog or exposure to infected feces or water. The virus also can live on objects such as feed bowls, leashes, clothing, and shoes. Within a short period of time, the virus will cause the dog to become ill. Lethargy, not eating, stomach discomfort, and vomiting will follow. The dog may exhibit severe stomach pain. Diarrhea will begin shortly after the other symptoms.

This horrible-sounding illness is the result of parvovirus, CPV2 to be exact. The virus was first discovered in the 1960s but it was a mild illness and caused no real harm or death to the animal. By 1976, a mutated strain of parvo circulated the world. Dogs quickly died from the severe symptoms. Puppies and elderly dogs were particularly susceptible to death from the symptoms of parvo. Other dogs that lacked good nutrition and were weakened, to begin with, also died as a result of the new strain.

How Does Parvo Make Dogs Sick?

The virus enters the dog after contact with another infected dog, feces, or item. The first stop is the tonsils in the dog's throat. The virus makes its way into the blood stream, then it multiplies and travels to all organs in the body.

Once it hits the bone marrow where the infection-fighting cells are made, it invades and begins to manufacture virus cells even faster. Soon the body is fully assaulted by the virus. The once-active puppy loses interest in moving a muscle. There is no interest in food. Treats go uneaten. Soon the puppy or dog begins to vomit. The virus heads to another rich environment for breeding, the intestines where it attacks the lining of the stomach and intestines.

One of the most distinctive signs of parvo in dogs

is the horrible-smelling diarrhea. Those who work in veterinary clinics and rescue shelters tell us that the smell is one that you never forget. Now that all the signs of parvo are present, the virus is fully entrenched in your pet. The care of the dog at this point has a lot to do with the dog's survival.

Providing Immunity

No dogs are immune to parvo for long. If the mother has been vaccinated or has recovered from a case of canine parvo, some short-term immunity passes to the pups in the colostrum and milk. This is short-lived and vaccination is the only reliable method of preventing canine parvo, according to the American Veterinary Medical Association (AVMA). All dog breeds are at risk from contracting canine parvo. Recovery time is lengthy and consists of supporting the body functions while the virus works its way through the dog's system.

Avoiding Contact with the Parvovirus

Being aware is a good start in avoiding the illness in your dog. Veterinarians recommend avoiding areas where your puppy may come into contact with unvaccinated dogs. Taking your unvaccinated puppy to areas such as dog parks, doggy daycare, boarding kennels, and grooming shops opens them to the risk of contracting parvo.

Dr. Pleura, our family's veterinarian, also mentioned the issue of buying vaccinations to administer at home. The purchased vaccinations may not be the best quality if they have not been stored properly before being administered. Subsequent vaccine failure and infection with the parvovirus has been seen in dogs that were given store-bought vaccines.



Being aware of the severity of the illness is a good start in avoiding the illness in your dog.

Vaccination Schedule for Puppies

In addition, the AVMA stresses the importance of obtaining the complete series of vaccines for your dog. A series of shots is administered to puppies every three weeks. The three-shot series of puppy shots plus a parvo booster between 14 and 16 weeks of age, is your best plan to avoid parvo infection. There can be a gap in immunity as the puppy's immune system begins to mature and take over the immunity from the mother. Even as the puppies begin vaccinations, they can become infected with parvo. If you see signs of parvo in your puppy, even if it is on a vaccination schedule, seek treatment quickly.

Training your puppy is important in the prevention of parvo, too. Teach your dog commands such as "leave it" or "drop," and use these commands when the dog attempts to contact feces of other animals. Dog owners should be responsible about picking up pet waste, especially in public places where other dogs can come into contact with it.

Other than strong bleach solution and extremely high temperature, parvovirus is hard to kill. Canine parvo can live in the environment for up to six months. If you know of an outbreak at a facility or public space, avoid taking an unvaccinated dog there.

Parvo in dogs is not an immediate death sentence but one that requires a fast response and good supportive medical care. Immunizing your dog and being cautious during the early puppy weeks give you the best chance of avoiding the disease in the first place. 🐾





2022 Chick
Pre-Orders
Start Nov. 1

FREE Catalog

Defining Quality for Generations

For over a century, Murray McMurray Hatchery has remained a trusted, family-owned business, working tirelessly to ensure our poultry meets the highest standards. Whether you are an experienced enthusiast, or just embarking on the journey, look to McMurray Hatchery for guaranteed quality rare and Heritage breeds, low minimums, and all the supplies you need to raise your flock.

MCMURRAYHATCHERY.COM | 800.456.3280

CHICKENS • DUCKS • GEES • TURKEYS • QUAIL • GUINEAS • PEAFOWL • PHEASANTS • PARTRIDGE

