



# Quarterly Newsletter

January, February, March 2012

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## Cold Stressed Calves

by Dr. Bob Larson, DVM, Kansas State University

In many areas of the country, calves are born during times of the year when cold stress can be a leading cause of death. During the first 24 hours of life, calves are in the greatest danger of cold stress (also called hypothermia). Because calves are born wet, with a saturated hair coat, body heat loss can be very rapid until they are dry. Contact with snow or wet ground will increase the amount of time that a calf stays wet and in danger.

Calves are born with a body temperature of about 100°F. When exposed to a cold environment, calves are able to produce heat in two ways, shivering and the heat production of brown adipose tissue (brown fat that surrounds the kidneys of a newborn) and they can conserve heat by reducing blood flow to the body surface and extremities (feet, ears, etc.). In early stages of cold exposure, calves will shiver vigorously and have a faster heart rate and breathing rate. If that does not keep his body temperature up, the calf's body sends less blood to extremities in an effort to minimize heat loss. When this occurs, nostrils and feet feel cold. Severe cold stress occurs when the body temperature drops below 94°F. At this temperature, the brain and other organs are affected and the calf becomes depressed, unable to rise, and can become unconscious.

Calves suffering from cold stress must be warmed so that body temperature can above 100°F. If body temperature has not dropped too far, putting the calf in the cab of a pickup out of the wind and moisture and with the heater blowing will warm the calf. In more severe cases the calves can be placed in warm water, specially designed warming boxes, or near a heating source such as an electric blanket, heat lamp, or hot water bottles. To avoid skin burns, the heat source should not exceed 108°F. In addition to an external heat source, cold-stressed calves should be fed warm colostrum, milk, or electrolyte fluid with an energy source using an esophageal feeder.

An experiment done in Canada in the late 1980s showed that immersing calves in warm (100°F) water (being careful to keep the calf's head above water) brought body temperature back to normal within 1 hour versus 1½ hours for calves warmed with added insulation or infrared lamps. Once body temperature returns to 100°F, the calf's hair coat should be dried before being returned outside. If using a warming box, care must be taken to circulate air, reduce humidity, and remove the animal once the body temperature reaches 100°F.

During periods of cold or wet weather, newborn calves (<24-48 hours) should be checked periodically with a thermometer and any calf with a below-normal temperature, even if it appears OK, should be warmed. Prevention of cold stress involves management to ensure that calves can be born in a short period of time and both the calf and dam can stand shortly after calving so that they can bond and the calf can begin suckling. Anything that prolongs calving or reduces the chance that a calf will nurse soon after birth should be addressed by management changes. Calving difficulties are minimized by proper heifer development, proper bull selection for calving

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### IRON COUNTY SWCD BOARD MEMBERS:

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*Preserving Soil & Water through Conservation*

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## Iron County Soil & Water Conservation District

### What Is A Soil and Water Conservation District?

Soil and water conservation districts are locally led entities that provide non-regulatory conservation direction. There are 114 soil and water conservation districts in Missouri. The districts have a responsibility to conserve soil and water resources by working with landowners at a local level to decrease soil erosion and improve water quality.

Each district has a local board of supervisors. This board consists of four locally elected members and one member from University of Missouri Extension.

Agriculture in Missouri varies as does its land; therefore the programs and services offered vary with each district. Each district develops a long-range plan in order to prioritize the area's needs. Erosion rates in Missouri have decreased by half in the past 20 years.

Money is available through the Cost-Share Program to install erosion control practices. This voluntary program can reimburse agricultural landowners for up to 75 percent of the cost of approved practices. The Cost-Share Program has helped thousands of agricultural landowners conserve Missouri's soil and water resources, saving an estimated 137 million tons of soil.

Soil and water conservation districts and their conservation partners, such as the U.S. Department of Agriculture Natural Resources Conservation Service, provide technical assistance for conservation planning, with layout and design, soil loss determination and grassland management. Equipment is also available for rent to promote conservation by preventing erosion and improving water quality.

Districts provide education to landowners, schools and the general public about soil and water conservation issues. Field days allow landowners to view different conservation techniques. The districts publish newsletters, have brochures available and also participate in poster contests, Earth Day and other various school programs.

Missouri soil and water conservation districts are funded by the one-tenth-of-one-percent parks and soils sales tax.

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### FSA NEWS

#### FSA Adopting GovDelivery

The USDA Farm Service Agency offices are moving toward a paperless operation. Producers are asked to enroll in the new GovDelivery system which will provide notices, newsletters and electronic reminders instead of a hard copy through the mail. FSA, like many other organizations, is trying to work smarter and be more efficient. Moving to electronic notifications via email will help conserve resources and save taxpayer dollars. County Committee ballots will continue to be mailed to all eligible producers. Producers can now subscribe to receive free e-mail updates by going to <http://www.fsa.usda.gov/subscribe>

#### FSA Signature Policy

Using the correct signature when doing business with FSA can save time and prevent a delay in program benefits. The following are FSA signature guidelines:

- Spouses may sign documents on behalf of each other for FSA and CCC programs in which either has an interest, unless written notification denying a spouse this authority has been provided to the county office
- Spouses shall not sign on behalf of each other as an authorized signatory for partnerships, joint ventures, corporations, or other similar entities
- Individual signatures are also required on certain Farm Loan Program and Farm Storage Facility Loan documents.

### Recycling Ideas For Your Christmas Tree

When the holidays are over, there are several creative ways to make further use of your tree. Shredding or chipping your tree can provide useful mulch for pathways, weed control around trees and utility poles or add it to your compost pile. Whole Christmas trees can be useful in a ditch to slow down soil erosion, in a pond to provide habitat for fish and other aquatic life, placed in your backyard will offer cover for wildlife or under bird feeders can provide a place to nest in the branches.

### Growing Apples

by Katie Kammler, Plant Science Specialist

Growing apples in Missouri can be a challenging but worthwhile endeavor. With careful planning and care, you can harvest apples for many years. Two trees usually produce plenty of apples for a family of four. Also two different apple cultivars are needed to ensure adequate pollination. A mature dwarf tree will produce 3 to 6 bushels (42 lbs./bushel). A semi-dwarf tree will produce 6 to 10 bushels.

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Soil test kits are available through the Extension office

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## Soil Savers Corner

### Star Gazing



These long dark nights make for great star-watching! Turn off the TV, bundle up warm and take the kids outside for some star watching. Several web sites post star maps, which make for easy identification of constellations, planets and other space phenomena, such as meteor showers and eclipses.

For more information, check out these websites:

<http://www.nightskyinfo.com/>  
or

[http://hubblesite.org/  
explore\\_astronomy/](http://hubblesite.org/explore_astronomy/)

The library may have some good books, too—look for *The Kids Book of the Night Sky* by Ann Love or *Glow-in-the-Dark Constellations* by C. E. Thompson.



Of course, you will want to stock up on hot cocoa for warming up afterwards!!

### (Cold Stressed Calves continued)

ease or birth weight, and proper nutrition so that heifers and cows calve in a body condition score of 5 to 6 on a 9-point scale. Cows with large teats or that are not attentive mothers should be culled. In addition, work at the USDA research facility in Montana found that feeding cows a high-fat diet supplemented with safflower seed as the fat source for 45 days prior to calving resulted in calves that were able to maintain body temperature for a longer period of time during cold challenge (could better handle cold stress).

Calving pastures that provide mud-free areas that are out of the wind are important to minimize the risk of cold stress. A large pasture with good drainage, southern exposure, and a natural windbreak that will block prevailing winds is probably adequate for many herds. Inexpensive windbreaks can be constructed when natural protection is lacking. Windbreaks should be sufficiently large to avoid concentrating cattle. In areas of the country with minimal snowfall, winter pasture can be stockpiled. Cool season grasses, such as tall fescue, are permitted to grow in the fall and access to these pastures is restricted until calving season. Use of pasture as the primary forage source during calving encourages cow dispersal and minimizes development of muddy areas. If the herd forage plan includes feeding hay, consider feeding hay in early to mid-gestation and saving stockpiled pasture for the calving season. If supplemental hay and grain are fed during calving, these should be provided at locations that are separate and distant from water sources and windbreaks. This practice will encourage cow dispersal and minimize development of muddy areas. I discourage the use of bale rings in calving and nursery pastures and suggest that if using large round bales, they be unrolled and the feeding area changed with each feeding. Unrolled bales will have greater hay waste, but reduced chance for mud caused by concentrating the herd into small feeding areas, and unrolled hay provides bedding for newborn calves so that they are not in direct contact with the ground.

Planning ahead and considering newborn comfort and protection when making heifer development, bull selection, nutrition, and pasture management decisions can greatly reduce the risk of cold stressed calves if inclement weather occurs during calving. If calving occurs during cold or wet weather, producers will need to carry a thermometer to monitor calves during the first one to two days of life and will need to have facilities available to rapidly and safely warm calves.

### (Growing Apples continued)

Apple trees are generally grafted, the top part is the scion that determines type of apple and fruiting habit and the bottom is the rootstock which determines the earliness to bear fruit, the overall size of the tree, and its longevity. Both scion and rootstock affect the pest susceptibility and the cold hardiness of the tree. Pick disease-resistant cultivars as much as possible because Missouri's climate is favorable for fire blight, powdery mildew, scab, and cedar apple rust.

Some of the more commonly grown varieties in Missouri include Arkansas Black, Cortland, Empire, Golden Delicious, Jonafree, Jonagold, Jonathon, Liberty, Mutsu, Ozark Gold, Red Delicious, Redfree, Red Rome, Royal Gala and Stayman Winsap. There are many more varieties that can be grown in Missouri.

Spring planting can be done in late March to mid April or in the fall from mid to late October. Pruning allows you to control the fruit load, get rid of diseased and dead branches, and develop a strong framework leading to healthy trees. Soil test first and apply fertilizer accordingly. The general recommendation is 12-12-12 or similar fertilizer at a half pound rate in a circular band one month after planting and one pound the next year in the drip line. Fertilizer needs will increase as the tree grows.

Keep apples off of trees the first 2 years so the tree will develop a good root system and strong framework. Fruit thinning is necessary for good-sized apples at harvest and development of next year's fruit buds. Leave only one apple per cluster and at least 6 inches apart. This should be done when the apples are small. Sunlight penetration and air movement from proper pruning will help prevent disease. Weed control will reduce competition with the tree and vegetation that harbors pests. When chemical control is necessary, follow the labeled instructions for the right pest.

## NRCS Announces Ranking Dates for Major Conservation Programs and Initiatives

The USDA Natural Resources Conservation Service (NRCS) today announced ranking dates for its major conservation programs and initiatives that offer technical and financial assistance to Missouri farmers and ranchers.

NRCS accepts applications for financial assistance on a continuous basis throughout the year. However, NRCS establishes ranking periods for its programs that allow it to rank submitted proposals for funding consideration. NRCS then notifies all applicants of the results of the rankings and begins developing contracts with selected applicants.

The ranking period cutoff dates for the major conservation programs and initiatives that apply in Missouri are:  
February 3, 2012: Environmental Quality Incentives Program (EQIP); Wildlife Habitat Incentives Program (WHIP); On-Farm Energy

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\*Cold Stressed Calves  
\*FSA News  
\*Christmas Tree Recycling  
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Initiative; Organic Initiative; Seasonal High Tunnel Initiative. March 30, 2012: On-Farm Energy Initiative; Organic Initiative; Seasonal High Tunnel Initiative. June 1, 2012: On-Farm Energy Initiative; Organic Initiative; Seasonal High Tunnel Initiative.

Moving to multiple ranking dates instead of just one annually will make it easier for more producers to apply for the three initiatives and help them get started with implementing the practices they need to benefit the natural resources on their operations, State Conservationist J.R. Flores says.

"This change will also give Missouri's agriculture producers more time to make sure they choose the initiatives that are right for their operations," Flores says.

### Program and Initiative Overviews

**Environmental Quality Incentives Program:** EQIP provides financial and technical assistance to install and implement structural and management conservation practices on agricultural land.

**Wildlife Habitat Incentives Program:** WHIP provides financial and technical assistance on private agricultural land, nonindustrial private forest land and Indian land to assist eligible producers establish and manage fish and wildlife habitat.

**On-Farm Energy Initiative:** NRCS and producers develop Agricultural Energy Management Plans (AgEMP) or farm energy audits that assess energy consumption on an operation. NRCS then uses audit data to develop energy conservation recommendations. Each AgEMP has a landscape component that assesses equipment and farming processes and a farm headquarters component that assesses power usage and efficiencies in livestock buildings, grain handling operations, and similar facilities to support the farm operation.

**Organic Initiative:** NRCS helps certified organic growers and producers working to achieve organic certification install conservation practices for organic production. New for fiscal year 2012, applicants will be evaluated continuously during the ranking periods. Applications meeting or exceeding a threshold score may be approved for an EQIP contract before the end of the ranking period. Applications rating below the threshold score will be deferred to the next period. A new threshold score will be established at the beginning of each ranking period. This new scoring process allows organic producers to implement conservation practices in a timelier manner.

**Seasonal High Tunnel Pilot Initiative:** NRCS helps producers plan and implement the steel-framed, polyethylene-covered structures that extend growing seasons in an environmentally safe manner. High tunnel benefits include better plant and soil quality, fewer nutrients and pesticides in the environment, and better air quality due to fewer vehicles being needed to transport crops.

Visit the NRCS National Web site for more information on how to apply for these initiatives and connect with an NRCS office near you.

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