UNL Extension: Acreage Insights

Acreage eNews-December 2013

http://acreage.unl.edu

Fruit Trees Offer Backyard Bounty
By Vaughn Hammond, UNL Extension Specialty Crops Educator

Nebraska – the fruit production hub of the Midwest?

Today Nebraska is famous for its bountiful production of grain and livestock, but in the late 1800s and early 1900s Nebraska was a nationally recognized fruit-producing state. Nebraska's move toward fruit production began in the mid-1850s as pioneers crossed the Missouri River at Brownville on the Brownville Ferry. Many settlers homesteaded near the crossing in Nemaha County located in southeast Nebraska.

Publications from the Nebraska Horticultural Society, which began publishing its yearly proceedings in the 1850s, tell us that during this period Judge J. W. Hall of Brownville Planted the first apple tree in what was to be the state of Nebraska. The variety was unknown, but reportedly the tree bore yellow fruit claimed to be as sweet as honey and exhibited amazing vigor, resulting in production 17 months after planting. The vigor and fruit quality were attributed to the rich soil of the region, and a fruit production industry was born.

A full complement of both trees and small fruits were produced throughout Nebraska in both commercial and smaller plantings. The majority of commercial production took place in eastern Nebraska with the greatest concentration found in the southeast area of the state. Commercial orchards with hundreds of acres were planted. Most homesteads had groves of fruit trees to supply their needs. Apples, peaches, plums, apricots , pears and tart cherries were planted throughout the region. Small fruits such as raspberries, blackberries, gooseberries and grapes also were produced.

The face of Nebraska's fruit industry began to change with Prohibition, the Great Depression and, most notably, the Armistice Day freeze on Nov. 11, 1940. During the late 1930's into 1940 Nebraska experienced a prolonged drought. The growing season of 1940 was very warm and dry, and the first freeze normally experienced in October never came. Light rain began to fall, nourishing the fall-canopied trees, the rain fell heavier and the fruit trees pulled in the moisture. Temperatures dropped overnight from the 60s to below zero causing the trunks of the trees to rupture as the water inside them froze. Hundreds of acres of commercial orchards, as well as, countless smaller plantings of fruit crops were destroyed. Between cleanup costs and the economic times, few trees were replaced and orchards were converted to row crops.

Today, Nebraskans are showing renewed interest in planting a few fruit trees in their yards or on acreages. Many remember the day when their grandparents grew the fruit that they ate directly off the tree or canned for later use.

Planting Fruit Trees

There are many considerations to make when preparing to plant fruit trees. One of the most important tasks lies in the planning. Fruit trees are long-term endeavors, and it's important to fully understand the growing requirements for them to produce at their fullest. Start the planning process with a site analysis. Factors to consider include soil characteristic, the amount of sunlight the area receives, soil and air drainage, competition from other plants and available space.

Performing a soil test is a critical step that needs to take place early in the planning process. A soil test will determine the pH, fertility levels and amount of organic matter present in the soil. Guidelines for taking a soil sample to be used for testing can be found in the University of Nebraska—Lincoln publication NebGuide G1740 (ianrpubs.unl.edu). Since fruit crops are deeper rooted than many agronomic crops, the soil sample should be taken to the depth of 12 inches rather than the more commonly recommended 8 inches. It's important to do this early in the planning to make any amendments that may be needed.

Most fruit crops require full sun for optimum production. Full sun is classified as at least six hours of direct sunlight daily, preferably during midday for most fruit crops. Both soil drainage and air drainage also are important factors to consider. Heavy clay soils that retain water can lead to reduced vigor and death. Reduced air flow can lead to a buildup of cold air which can result in bud loss and, in extreme cases, even plant death.

Once it has been determined that the site is suitable for growing fruit, it's time to begin the fun part, which is choosing what to plant. The options are almost too many because of all the types

of fruit and the varieties found within each type that can be grown in Nebraska. Apples, peaches, pears, Asian pears, plums, apricots and tart cherries all are tree fruits that can be grown.

Several factors must be taken into account when choosing what to plant. Is the variety adapted to our growing zones? (Nebraska falls into zones 4 and 5.) Will the mature size fit into the site? Is the variety self-fruitful or is a pollinator required?

Mature size may be the most important factor to consider. Mature fruit tree size is classified as standard, semidwarf or dwarf. Tree size can be dictated by either genetics or by grafting. Grafting is essentially splicing two types of trees together—two types of apples, for example. The rootstock is the portion of the tree that contains the roots and the scion wood is the portion that is "spliced" onto the rootstock and becomes the upper portion of the tree. The scion takes on certain characteristics of the rootstock. The rootstock can dictate the mature size of the tree.

A standard tree will have no size modification and may reach a size that is inappropriate for the site. Semidwarf trees reach a height of 8 to 15 feet. Dwarf trees range from 5 to 8 feet tall and untradwarfs and dwarf types need to be supported because they are capable of producing a crop that will be to heavy for the tree to physically support without the help of a stake or specially designed trellis for multiple trees.

Fruit trees are classified as either self-fruitful and not requiring a pollinator, or self-unfruitful and requiring a pollinator. Even if a variety is classified as self-pollinating, it's a good practice to plant a second genetically different variety that will act as a pollinator. Using a pollinator on a self-pollinating variety will maximize the pollination and result in a superior yield. Fruit trees are classified as either early, mid- or late-season bloomers. Be sure to match the blooming period of the pollinator and the tree that is to be pollinated. Ideally, the bloom period should be the same. A mid-season blooming pollinator can be used to pollinate either an early or late season variety with varying success. An early and a late season paring would generally not result in successful cross pollination.

Resistance to disease and insect pests is another characteristic to consider when choosing what to plant. Most fruit trees are susceptible to a variety of diseases and insects, but some are more susceptible than others. Choosing resistant varieties will reduce the amount of work needed to control disease and pests.

Apples

 More than 2,500 apple varieties currently are grown in the United States with Red Delicious being the most frequently planted variety. Apples tend to bloom later than many fruit trees so the likelihood that a crop will escape a normal frost and produce fruit is good. Apples can be either self-unfruitful or self-fruitful, with the majority being self-unfruitful and requiring a pollinator. Two commonly planted varieties, Jonathan and Golden Delicious, are considered self-fruitful and also work well as pollinators. Two other commonly planted varieties, Jonagold and Winesap, are poor pollinators and should not be used for the purpose.

Here are three disease-resistant apple varieties suitable for Nebraska:

- Liberty – is classified as a high-quality "dessert apple." It's resistant to apple scab, cedar apple rust, fire blight and mildew. Liberty is an annual producer ripening in Mid-September; zones 3-7.
- Freedom – is a multipurpose apple suitable for both eating and cooking. It is resistant to apple scab and moderately resistant to mildew, fire blight and cedar apple rust. Freedom ripens in late September; it is an excellent keeper and will store until January under proper conditions; zones 3-9.
- Enterprise – has excellent fruit quality and shows immunity to apple scab with high resistance to fire blight and cedar apple rust, as well as moderate resistance to powdery mildew. It ripens mid-October and is a good keeper; zones 4-8.

Peaches

Peaches are a wonderful fruit and many people aspire to grow them. They come with one major drawback; many varieties available for zone 4 production. Choose a variety with a later bloom period, which will reduce the chances of being hit by a late frost common to Nebraska. Most commonly available varieties of peaches and classified as self-fruitful and do not require a pollinator, but as with apples, yields can be increased by using a second pollinating variety.

- Reliance – is very cold hardy and produces medium to large yellow-fleshed fruit. It's classified as "freestone" meaning that the flesh readily separates from the pit. It's not as flavorful as hardier varieties, and ripens late July to early August; zones 4-8.
- Red Haven – is a freestone peach that produces medium to large yellow fruit. It's a good producer of firm fruit and is resistant to leaf spot; zones 5-8.
- Loring – produces medium-size fruit with yellow flesh. It's a freestone, vigorous grower that usually doesn't require thinning. It has excellent fruit quality; zones 5-8

Plums

Plums are classified as European, Damson or Japanese. All three types can be grown successfully in Nebraska, depending on the variety. European varieties are good fresh and for canning while Damson are more tart and therefore more suitable for cooking. Japanese varieties are susceptible to Nebraska spring frosts and will not produce fruit consistently, but are of very good quality and worth a try. The majority of plums require a second variety for pollination.

- Stanley – is European and produces blue-skinned fruit suitable for eating and cooking. It's late blooming and is a heavy producer. The oblong fruit ripens in mid-September; zones 4-9.
- Castleton – is European with blue-skinned fruit that is classified as a dessert plum. It's a good producer, ripening in late August to early September; zones 5-9.
- Shiro – is a Japanese type with yellow skin and white flesh. Very sweet, it ripens in late July to early August; zones 5-8.

Pears

Pears do very well in Nebraska's climate and may be the easiest tree fruit to grow. Most varieties are considered self-unfruitful, and require a pollinator. Although some varieties are classified as self-pollinating, they respond favorably to a second variety acting as a pollinator. Most pear varieties are excellent pollinators with the exception of Seckel pear pollinating Bartlett. Pear flowers are small compared to other fruiting trees and require more pollinating insects to complete the job.

- Bartlett – is considered the standard for pears. Very productive with large, juicy fruit suitable for eating or canning, it ripens in late August and is best if picked mature but green, and ripened off the tree. It's somewhat self-fertile but yields better using a separate pollinating variety; zones 4-9.
- Anjou – is a green pear with a slightly yellow tinge when ripe. This tree bears large fruit that stores well. It will cross pollinate with Bartlett; zones 4-9.
- Comice – is a dessert pear, with large fruit that ripens yellow with a tinge of red. It can be self-fruitful but yields better with cross pollination; zones 4-9.

Apricots

Apricots tend to be one of the most frost-susceptible tree fruits grown in Nebraska. Site location plays a large role in the fruiting success of apricots. Sites with good air drainage that allow cold air to flow out and away from the trees have the greatest success. Good air drainage coupled with choosing the proper variety helps increase the chances of harvesting a crop, although it's unlikely a tree will produce a crop on a yearly basis.

- Hargrand – is very hardy and blooms mid- to late April, this variety produces large freestone fruit with good flavor. It has very good disease resistance and is self-fruitful; zones 4-7.
- Sungold – also is very hardy and blooms mid- to late April. It produces medium-size freestone fruit and is self-unfruitful with limited disease resistance; zones 4-8.

Tart Cherries

Tart Cherries tend to be very good producers. Flowering takes place later in the spring,

allowing crops to be produced most years. Trees are less than 15 feet tall with some varieties such as North Star only growing to 5 feet. The major problem with tart cherries is that birds love them! As soon as they are ripe the birds move in, so be prepared to harvest when you start to see that the birds are interested in them.

Tart Cherries are considered self-fruitful, so a second variety is not needed for pollination, although a second variety can be beneficial. If a pollinator is used, it's important to know that a tart cherry and a sweet cherry will not cross pollinate.

Producing sweet cherries in Nebraska is difficult. Growing conditions are unfavorable and the fruit tends to be small. It's also susceptible to fruit rot.

- Montmorency – is considered the standard for tart cherries. It is very productive, bearing firm medium-size, bright red fruit. The tree blooms in early May and fruit ripens in July; zones 4-9.
- Balaton – blooms and yields 6 to 10 feet tall. It has small, deep red fruit with red flesh; zones 3-8.

Wood Mulch and Disease or Critters
By Kelly Feehan, UNL Extension Horticulture Educator


Mulching landscape plants is important to maintaining healthy plants. Yet some homeowners have concerns about mulch carrying diseases or attracting insects.

Most Diseases Not a Concern
As Scotch pine die from pine wilt and other trees die from last year's drought stress, questions about the safety of chipping and using these trees as mulch in the landscape arise.

In most cases, it is fine to chip dead trees and use them for mulch around other trees. For example, this is true of Scotch pine trees that die from pine wilt disease. The wood can be chipped and used for mulch.

However, the wood of trees that die from pine wilt or Dutch elm disease for example, should not be saved for firewood. These diseases are vectored (moved from tree to tree) by beetles. If the wood is stored until next season, the beetles will still emerge and transfer the disease to nearby trees of the same species.

Because the chipping process kills most beetles and wood chips are not a good environment for tree pathogen survival, the risk of diseases being transmitted from wood chips to healthy trees is low and the benefits of using organic mulch outweigh potential risks.

Verticillium Wilt
About the only disease research has shown to be transmitted through mulch is Verticillium wilt.

If a tree has died from Verticillium wilt, avoid chipping and using it for wood mulch. Otherwise, the risk of tree pathogens spreading via mulch is limited.

Artillery Fungi

One fungus to be aware of near a home is artillery fungi. While this fungus does not harm plants, it could damage nearby cars and house siding. Organic mulch naturally decomposes to add organic matter to soil. This is one of the benefits of mulch as long as a weed mat is not placed between soil and wood mulch.

Artillery fungi have a role in decomposition of organic mulch. The fungus is so named because it shoots spore masses high into the air. These spore masses stick to surfaces and can appear as small tar-like spots on house siding or cars and are difficult to remove. To prevent this from happening, avoid the use of pure wood mulch and use bark mulch instead.

Termites, Carpenter Ants, and Other Insects

Concerns about wood mulch attracting termites or carpenter ants are common. Termites found in Nebraska are subterranean termites, meaning they nest in soil and not in the wood they feed on. While termites may find and feed on wood mulch, new colonies are unlikely to become established in an area because of wood mulch.

Carpenter ants do not eat wood. They create galleries in moist wood for nesting. Because wood mulch dries out quickly and individual wood pieces are small; it is very unlikely carpenter ants would try to establish a nest in wood mulch.

Some critters, like millipedes and sowbugs, thrive in the cool, moist environment found beneath mulch and they feed on decaying mulch. Just as with logs in the forest, more of these critters can be found beneath mulch but most are not harmful to plants.

If mulch is used near entrances or near basement windows, these unwanted critters might find their way indoors. If this is a concern, keep mulch away from the homes foundation and caulk cracks and crevices to avoid insect entry.

Voles

One critter mulch can attract is voles. At this time of year, too deep of a mulch layer can harbor rodents, like voles, who gnaw on stems and girdle plants. If mulch is piled against tree trunks, pull it back at least a six inches from the trunk.

Poinsettia
By Kelly Feehan, UNL Extension Horticulture Educator

 Have you heard about the large weed that, despite the fact the plants flowers have no colorful petals, has become the most popular blooming plant at Christmas? You have since the plant is poinsettia. How did this plant become such a marketing success and why is Johnny Carson mentioned in the story?

History
A native plant of Mexico, poinsettia's history in the United States begins in the 1800s when the first United States Ambassador to Mexico was appointed by John Quincy Adams. His name was Joel Roberts Poinsett.

A hobby of Poinsetts was to wander the countryside looking for new plants. In 1828, he noticed a shrubby plant with large red leafy bracts growing next to a road. He took cuttings from the plant to grow in his South Carolina greenhouse. This is how poinsettia came by its common name.

Prior to this, poinsettia had been assigned its botanical name by a German botanist Wilenow. He was impressed by the plants color when it grew through a crack in his greenhouse. Wilenow gave the plant the botanical name, *Euphorbia pulcherrima*, meaning "very beautiful."

Introduction as a Holiday Plant
How poinsettia became the number one Christmas plant may best be credited to the Paul Ecke Ranch in California. Poinsettia grew wild in the area near the ranch. The tall, leggy plant bloomed during winter, giving Ecke the idea it would make a good holiday flowering plant. In the early 1920s, Ecke grew field grown plants and marketed them at roadside stands in the Beverly Hills and Hollywood area.

From 1923 to the 1960s, his main business was producing field-grown plants which were spring harvested and shipped by rail to greenhouse growers across the country. Ecke traveled the country, promoting the plant to greenhouse growers, teaching them what he had learned and encouraging them to market the plant as a holiday flower.

In 1963, poinsettia breeding developments yielded the first commercial quality cultivars that grew well as potted plants. At this time, Paul Ecke Jr. joined his father in the business. With formal training in horticulture, he encouraged his dad to move toward greenhouse culture. Ecke Sr. was skeptical but by the mid-1960s most of their operation had changed from field grown to greenhouse grown plants.

With a vision of what the poinsettia could become, Ecke Jr. used the media to promote poinsettias as a necessary part of any holiday experience. The business worked with television, such as The Tonight Show and Bob Hope Christmas Specials, to make certain poinsettias were always a part of holiday sets.

This story goes to show that with vision and a lot of persistence even a weed can become a success. Just be careful about introducing wild plants into the landscape. Some of them can become invasive weeds.

And are poinsettia flowers really without petals? The colorful parts of poinsettias are modified leaf bracts. The yellow button-like, petal-less objects in the center of the leaf bracts are the true flowers. The colorful bracts last longest if the plant is provided bright, but indirect light; the potting mix is kept moist but not saturated; and the plant is located away from air drafts and heat sources.

Sources: University of Illinois Poinsettia History Page and the Paul Ecke Ranch website.

Selection of Holiday Plants
By John Fech, UNL Extension Horticulture Educator

I can't think of too many plants that say Christmas as much as poinsettias. Place one in a room, and that's all you need to make a strong holiday statement, unless you want to add a yellow one, or a Christmas rose poinsettia, or any of the unusual cultivars. But regardless of the poinsettia type, be assured poinsettias ARE NOT poisonous!

There are other gift plants for Christmas. Azaleas add a splash of color and take on a more hardy aspect with their woody stems. They have an extended blooming time provided you buy one that has more flower buds than open flowers. Like poinsettias, they like cool to moderate temperatures.

Cyclamens make a showing in the florist shop during the holiday season as well. Their colorful flowers that droop down and silvery green leaves make a perfect counterbalance for the poinsettia. Cyclamens are problematic, however. Too much water on your part can rot the plant. Keep the water off the center of the plant. Cyclamens thrive on high humidity. They turn brown if they don't get it. Insects and other creepy crawlies love cyclamens. Mites and aphids are common pests. Try to keep them away from other houseplants to keep cross-infestation at a minimum.

Christmas cacti display their exotic blooms, though they are often confused with Thanksgiving or Easter cactus. A blooming cactus is a nice touch. It might be the perfect plant for a warmer, drier location. The big overriding factor is that dramatic - or even moderate - changes in environment will cause the blooms to drop off. These plants don't like changes in light, humidity and temperature.

Christmas pepper and Christmas cherry are other plants sold during the holidays. The cherry is really a pepper, but they don't even look like one another. The pepper looks like one of those small hot types, and they are really hot! The cherry looks like a little red styrofoam ball. This plant is attractive, but the fruit is poisonous. It's best not to display it near little kids.

Water Conservation in the Shower
By Sharon Skipton, UNL Extension Water Quality Educator, and Bruce Dvorak, UNL Extension Environmental Engineering Specialist

Have you ever wondered how much water you use every time you take a shower? It's worth thinking about. In Nebraska, about 80 percent of us rely on groundwater for household water. Nebraska's groundwater comes from natural underground layers of sand and gravel that contain water. Groundwater is a renewable resource, replenished mostly by precipitation. However, groundwater resources are not limitless, and groundwater levels can decline when use exceeds recharge. Efficient water use is important in order to maintain groundwater levels.

So, how much water do you use when you shower? Older showerheads might use as much as 6 to 8 gallons of water per minute (gpm). A study by the American Water Works Association found that, on the average, we take eight-minute showers. If you take an eight- minute shower using one of those showerheads, you will use 48 to 64 gallons of water. That -15-minute shower that some of us like will result in 90 to 120 gallons being used, while a shorter shower will result in less water being used.

Regulatory standards enacted almost 20 years ago required showerheads made as of 1994 to use no more than 2.5 gpm. That 8 minute shower will use only 20 gallons, and the 15-minute shower will use just over 37 gallons with one of these fixtures. The newer showerhead could save as much as 44 gallons per 8-minute shower, or over 16,000 gallons of water in a year if you shower every day.

The most water-efficient showerheads carry the WaterSense® label. Products with the label are generally 20 percent more water-efficient than similar products on the market. Showerheads with the WaterSense® label must use no more than 2.0 gpm resulting in 16 gallons for an 8-minute shower or 30 gallons for a 15-minute shower.

Luxury shower systems, with multiple showerheads and nozzles became popular during the past few years. These shower systems can use 8, 10, or even 12 gpm. Showering for 8 minutes in one of these “human car washes” can use a lot of water. More recently, many manufacturers modified these shower systems so that only one part of the system can be operated at a time. This gives users lots of options for water delivery, while allowing only 2.5 gpm to be delivered at any given time.

Regardless of the showerhead model you have, you can save water by taking shorter showers. You also can save water by shutting off the water flow while soaping-up or shampooing. Some showerheads have a quick shut-off lever that allows you to turn the water on and off without adjusting the water temperature.

The benefits of reducing water use in a shower include energy conservation and associated energy costs. The U.S. Department of Energy reports that domestic water heating accounts for between 15 and 25 percent of the energy consumed in homes, with showering/bathing often being a major component. Becoming more water-efficient in the shower becomes a win-win-win. It will conserve water, consume less energy, and reduce energy bills.

Fall Marks the Annual Cycle of Parasite Control in Horses
By Kathleen Anderson, UNL Extension Equine Specialist

Parasite resistance to anthelmintics (dewormers) is widespread and traditional frequent deworming is no longer a viable option in parasite control. Deworming schedules should be based on seasonal patterns of parasite transmission and an individual horse's susceptibility to parasites. Small strangles pose the greatest threat to adult horses and the risk of transmission is highest from September through March in Nebraska and throughout the southeast. To minimize parasite resistance, an individual horse's susceptibility to parasite infection should be identified through performing fecal egg counts (FEC) of the manure.

Life Cycle: Small Strongyles
Transmission of strongyles is dependent on the climate. Adult worms lay their eggs in the large intestine and eggs are shed through the manure to the environment where they hatch into larvae if conditions are favorable (43 to 85oF). The larvae survive under extreme cold and freezing, but they die when temperatures exceed 90oF. Pastures provide the ideal environment for larvae so transmission most commonly occurs in grazing horses.

Pasture Management Tips

- Avoid high stocking rates (2 acres per horse is minimum requirement)

- Avoid overgrazing (Larvae are found on lowest part of plants)
- Utilize rotational grazing
- Drag or harrow ONLY in the summer and restrict horses access for several weeks following
- Group horses by age (young horses housed separately from older horses).
- House new horses separately for 2 weeks and until FEC is performed

Parasite Resistance to Dewormers

Parasite resistance to anthelmintics (dewormers) is widespread. Parasite resistance has been documented for all three major classes of anthelmintics (Craig et al. 2007; Lyons et al, 2007). More than 95 percent of horse herds examined in the southeast U.S. were reported to have small strongyle populations resistant to benzimidazoles, and almost 50 percent of these herds were also resistant to pyrimidines. Localized resistance of ascarids to macrocyclic lactones has also been identified on some farms (Craig et al., 2007; Reinemeyer, 2009). To minimize parasite resistance, an individual horse's susceptibility parasite infection should be identified through performing fecal egg counts (FEC). The effectiveness of each class of anthelmintic should be identified through fecal egg count reduction testing (FECRT).

FEC and FECRT: Evidence Based Parasite Control

Fecal egg counts (FEC) are a measurement of the number of parasite eggs per gram (EPG) of manure and are also used to identify the type(s) of parasites affecting the horse. Individual horses differ in their susceptibility to parasites and they are classified based on their FEC as low contaminators (less than 200 EPG), moderate contaminators 9200 to 500 EPG), or high contaminators (more than 500 EPG). The classification of an individual horse usually remains the same from year to year; so fewer FECs are required after the first year. A second FEC is required after deworming to determine if the anthelmintic used was successful. Fecal Egg Count Reduction Testing (FECRT) is the process of performing FEC before and after treatment with a dewormer and the effectiveness of the dewormer is determined by the percent egg reduction. Equine veterinarians routinely perform FEC for $10 to $30 per test.

Developing a Deworming Program

All horses should be dewormed at least two times per year at six-month intervals, usually in the Autumn and Spring when environmental conditions favor parasite transmission. Additional treatments will depend on the horses initial FEC (Table 1). Using products that are effective against small strongyles will maintain eradication of these parasites on a farm, and the addition of praziquantel will limit the transmission of tapeworms. Ivermectin and moxidectin are the only effective dewormers against bot larvae 9although bots are not a major concern in horses).

Table 1. Example of a parasite control program for horses in Nebraska.

	Months of Transmission			
Fecal Egg Count (FEC)1	September	December	March	May/June

Low, <200 EPG	Ivermectin or Moxidectin *PLUS* Praziquantel	Ivermectin	Ivermectin or Moxidectin PLUS Praziquantel	
Moderate, 200-500 EPG	Ivermectin or Moxidectin PLUS Praziquantel		Ivermectin or Moxidectin PLUS Praziquantel	Fenbendazole or Pyrantel (If effective otherwise Ivermectin)[2]
High, >500 EPG	Ivermectin or Moxidectin PLUS Praziquantel	Ivermectin	Ivermectin or Moxidectin PLUS Praziquantel	Fenbendazole or Pyrantel (If effective otherwise Ivermectin)[2]

[1]Initial Fecal Egg Count (FEC) in September followed by FECRT 10 to 14 days later to classify horses as low, moderate or high contaminators.
[2]If high contaminators must be treated with ivermectin in November (because of resistance to pyrimidines or benzimidazoles) their next treatment would be in January.

Considerations for Young Horses

Parasite control programs should be customized for individual horses and herds based on FEC, seasonal patterns of parasite transmission, the climate, and pasture management schemes. While the target parasite to control in adult horses are small strongyles, ascarids (roundworms) are common in young horses. Roundworms are not affected by the seasons and foals are typically dewormed at regular intervals *bimonthly) from 2 to 16 months of age.

References

Craig, T., P. Diamond, N. Ferwerda, et al. 2007. Evidence of ivermectin resistance by Parascaris equorum on a Texas horse farm. J. Equine Vet. Sci. 27:67-71.
Lyons, E., S. Tolliver and J. Drudge. 1999. A historic perspective of cyathostomes: Prevalence, treatment and control programs. Vet Parasitol. 85:97-112.
Reinemeyer, C. 2009. Controlling strongyle parasites of horses; a mandate for change. Proc. AAEP: 55:352-360

Hay Feeding Losses?
By Steve Tonn, UNL Extension Livestock Educator

 We are at the start of the winter hay feeding season for livestock and many acreage owners are feeding big round bales. They make the job much easier. Large bale feeding systems are designed to minimize labor but not waste. So how much of that hay are you throwing away? Depending on the feeding method, feeding losses can reach as high as 30-35 percent. You wouldn't dream of throwing away one third of the hay you are feeding to your horses or cows.

Large bales fed free-choice without a rack or feeder in muddy conditions can result in forage losses as high as 45%. That's what happens when livestock are allowed unlimited access to hay. Livestock trample, over-consume, foul on, and use for bedding 25% to 45% of the hay when it is fed with no restrictions or is not processed. Take a look to see how much hay is on the outside of the feeder and being wasted.

Hay loss and waste can be reduced by managing how often we feed and by the type of hay feeder we use. If hay is fed free choice, animals will over consume. Daily feeding forces animals to eat hay they might otherwise refuse, over-consume, trample and waste. Livestock waste less hay when the amount fed is limited to what is needed each day. One fourth more hay is needed when a four-day supply is fed with free access.

While we want to restrict the number of bales offered at one time, we should make sure that there is enough space for all animals to access the forage. Otherwise, the more aggressive animals will eat first and consume the more desirable hay, and animals that are more timid will be forced to eat the lower quality hay or go hungry.

Feeding hay in a rack or a round bale feeder limits the opportunity animals have to trample or soil hay, and reduces waste substantially. The least feeding losses occur when hay is fed with a rack or bale feeder that forces the animal to turn its head when backing away from the feeder. When animals can back straight out of a feeder, they can pull out large chunks of hay that drop on the ground and are lost as feed.

Research at the University of Nebraska and Michigan State University has shown the following percentages of feed waste for these common feeder types.

- 3.3% cone feeder
- 5.9% ring feeder with skirt
- 9% rack feeders
- 11.1% trailer feeder
- 14.2% cradle feeder

Long feeders are less effective than round or square feeders because boss animals will push others back by walking down the long feeder, interrupting their feeding and reducing their intake.

While some losses will always occur, keeping losses to a minimum can reduce feed costs, resulting in more efficient use of forages and saving money too.

Agri-Cultural With Dr. Lindsay

In a world where technology is changing so quickly, and endless information is available everywhere, it can be hard to know what is fact and what is fiction and if the sources are reliable. Couple this with the fact that most people are about three generations removed from a family farm, and they may have questions or concerns surrounding the livestock and agricultural industry.

Extension Educator, Lindsay Chichester, recently created a blog that will discuss the agricultural industry from many angels. Topics will range from meat, labeling claims, and livestock, to production practices, hot topics, and people who work in the industry. Each blog post will entertaining and educational, while providing some science and research. Check out the Friday Fun Fact on Toothless Grins.

Check out Lindsay's blog at agriculturalwithdrlindsay.com.

Healthy Holiday Gifts
By Lisa Franzen-Castle, UNL Extension Nutrition Specialist

Homemade food and cooking ingredients can be great gifts for friends and family this holiday season. It is also the time of year when local food pantries need additional food items. This season try giving health-related gifts and providing healthier food donations. The possibilities are endless, but here are a few ideas to help get started.

Tips for Healthy Holiday Gifts and Donations

- Fruit and vegetable bouquet. Try giving a colorful selection of fruits and vegetables, keeping them at optimum quality by assembling the basket shortly before giving it. Examples of items to include are green and red grapes, apples, oranges, peppers, broccoli, or zucchini.

- Holiday snack jar. Select a clear, covered container and fill it with healthy snacks such as little boxes of raisins, trail mix, 100-calorie packs of various crackers, dried fruit, baked chips and pretzels. Decorate the lid and/or jar with holiday cheer.

- Spice up your gifts. Zest up gifts by giving an assortment of herbs and spices. Examples that are effective in replacing the taste of salt include black pepper, minced garlic or garlic powder, minced onion or onion powder, basil, oregano, curry powder, and ginger. Examples of sweet-tasting spices that help reduce the need for sugar in certain foods are cinnamon, allspice, cloves, nutmeg, ginger, cardamom and anise.

- Mailing holiday food gifts. Food is a popular holiday gift and can be mailed safely if carefully chosen, well packaged and delivered in a timely manner. Coffee blends are easy to pack into decorative plastic or metal containers. Dried foods, nuts and dry mixes such as spiced teas, herb blends and party mixes, are also good choices.

- Gift certificate from your kitchen: Give a homemade “gift certificate” for fresh, healthy treats from your kitchen. You might promise to cook a complete meal for six people or to bake one fresh loaf of bread per month for the next year.

- Donating fruit and vegetable items. Help your local food pantry improve the quality of the food it distributes by donating fruit items such as canned fruit in water or its own

juices, no-sugar-added applesauce, dried fruits, or 100 percent canned or boxed juices. Examples of vegetable items include low-sodium or "no-salt-added" canned vegetables and soups.

- Donating grains, protein, and dairy foods. Examples of grain items include brown rice, whole grain cereal, dry noodles and pastas, popcorn, and low-fat graham crackers. Protein items could include canned chicken, turkey or tuna, canned or dried beans, unsalted nuts such as peanuts, almonds or walnuts, and peanut butter. Examples of dairy items include powdered milk, shelf-stable milk or soy milk (in a box), and evaporated milk.

Make this holiday season the gift of healthier food for yourself, family, friends, and when donating. For more food, nutrition, and health information related to helpful winter holiday food preparation, food safety, and healthy eating links go to UNL Food, Nutrition and Health.

Select Outdoor Yard Lights for Security and Energy Savings
By Shawn Shouse, ISU Extension Agricultural Engineer

Many rural residences and farmsteads use yard lights to provide night security and to illuminate driveways and buildings after dark. Selecting the right light will produce the results you want while saving energy.

How much light?
Light intensity is measured in foot candles. One lumen of light energy falling on one square foot creates one foot candle. For general yard security and movement, a light intensity of one half to two foot candles is recommended. This light intensity can be created by 100 to 175 watts of lamp size mounted 25 feet above ground and serving no more than 8,000 square feet.

Higher light intensity may be desired in areas of high activity or near building entrances.

What type of light fixture?
Unshielded lamps send light in all directions. Even standard downward-facing fixtures can lose one third of their light to the sides. A full parabolic reflector fixture will direct the most light to the ground in your target area and allow desired light intensity with a smaller lamp.

What type of lamp?
Lamp efficiency is one factor to consider and is measured in lumens of light per watt of electric consumption, vary widely. Some lamps are slow to start or to reach full intensity.

Standard incandescent and halogen lamps produce only 15 to 20 lumens per watt, but come on almost instantly. These lamps are fairly short-lived, but do not suffer from frequent on-off cycles. They are best where use time is short and the lamp is easy to access to change bulbs.

Compact fluorescent lamps create 45 to 100 lumens per watt, but take time to warm up to full

output and require special ballasts to start reliably below 40 degrees. They are not well suited to cold climate yard lighting.

High intensity discharge (HID) lamps such as mercury vapor, metal halide and high pressure sodium lamps have high output efficiency of 30 to 100 lumens per watt and a long life. They require time to start and are best used where they are left on for extended periods. Metal halide lamps are nearly twice as efficient as mercury vapor, and high pressure sodium lamps are slightly higher. Low pressure sodium lamps have the highest efficiency, but are infrequently used because of their distinctively orange color.

For general yard lighting that will stay on for extended hours, high pressure sodium is often the lamp of choice, followed closely by metal halide. Payback period on replacing a mercury vapor fixture with a smaller, more efficient high pressure sodium fixture can be as short as two to four years.

What controls are needed?
Many yard light fixtures come pre-wired with a photocontroller that will turn the lamp on at dusk and off at dawn. Extra energy can be saved by using a controller that can additionally turn the lamp off for the latter portion of the overnight hours. Called “half night” or “selectable time” photocontrollers, these devices save energy and reduce unwanted light pollution.

For local area lighting at building entrances, walkways or work zones such as fuel tanks, consider motion sensor controls.

Good yard lighting increases safety, provides security and enhances the appearance of your residence. Choosing the right light for your needs can improve effectiveness and save you money.

Information for this article was gathered from these good resources:
Ag Energy: Outdoor Lighting, by Scott Sanford, University of Wisconsin
Energy-Efficient Agricultural Lighting, by Scott Sanford, University of Wisconsin
Living On Acreages: What You Need to Know, MWPS-50, Midwest Plan Service, order from the ISU Extension Online Store.