

# UNL Extension: Acreage Insights

## Acreage eNews-August 2013

<http://acreage.unl.edu>



### Buying or Selling Hay by the Bale

By [Steve Tonn](#), UNL Extension Livestock Educator

Many acreage owners either have hay for sale or they need to buy it for their horses or other livestock. Often this hay is sold or bought by the bale. Buying by the bale can lead to paying an amount that is too high to too low for the value of the hay.

Deciding on a fair price for a bale of hay can be difficult. Much of our hay is packaged and sold in big round bales. Large round bales differ greatly in size and quality and those differences must be considered when establishing a fair price.

### Bale Size and Weight

Bale weight and nutrient content are critical factors in determining the value of a given bale. Bale weight affects, not only the amount of hay being bought or sold, but also the cost of feeding and transporting it. To accurately compare the value of different bales- including their transportation and feeding costs – you will need to know their size, weight and density.

Round bales are generally described in width x diameter measurements, or by height. Round bales come in six sizes ranging from 4 ft. x 4 ft. to 5 ft. x 6 ft.

A 4 x 4 bale weighs, on average, about 700 pounds, but the exact weight depends on the type of hay. A bale of finer cut hay, like second cutting alfalfa, will weigh more hay than a long-stem, first cutting grass hay.

- 4 x 4 bales average 700 lbs.
- 4 x 5 (or 5 x 4) bales average 1,000 lbs.
- 4 x 6 or 5 x 5 bales average 1,400 lbs.

Often the hay seller may think they know the weight of their bales, but it is rare that anyone actually knows unless they have a scale receipt or other verification of the weight.

The best way to know the true weight of a bale is to weigh it on a scale. Grain elevators, feed cooperatives, or truck stops with scales are possibilities for getting hay bales weighed. If actual weights are not available, then your only choice may be to estimate the average weight of the bales. [Bale Weight- How Important Is It?](#) is an excellent resource written by Jason Banta, Texas A & M Beef Specialist, and give guidelines for estimating bale weight.

### **Bale Nutrient Content**

Nutrient content can be determined in a lab with a forage quality test. If possible, ask the seller for a test report. If a test report is not available, then look closely at the hay and try to determine its:

- stage of maturity,
- leafiness,
- color,
- odor,
- and the amount of foreign material present.

A University of Maryland fact sheet, [Evaluating Hay Quality](#), discusses those factors in detail and includes a chart to rank and score what you see.

### **Storage Loss**

The last thing to check when evaluating the value or price of a large round bale is storage loss. Look to see how much of the bale is weathered or decayed. Keep in mind that if you have a few inches of decay on the top of the bale, and maybe even more on the bottom of the bale, that the percentage of hay lost is in relation to the size of the bale.

Of course, knowing the quality and quantity of hay you are purchasing is only the first step toward coming up with a fair price. Knowing what hay is selling for and how much nutrient value that a hay lot will provide is the key to settling on the right price.

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## Thirteen-Lined Ground Squirrels- Controlling Damage

By [Stephen Vantassel](#), UNL Extension Project Coordinator for Wildlife Damage Management



Thirteen-lined ground squirrels (*Spermophilus tridecemlineatus*) are common throughout Nebraska. Thirteen-lined ground squirrels, as their name suggests, have 13 light stripes with rows of light spots that run the length of their backs (Figure 1). The background color is tan or brown and the belly is white. This color pattern helps them blend into the landscape, thereby providing some protection from predators. Thirteen-lined ground squirrels are usually about 11 inches long, including a 5- to 6-inch tail. Adults weigh 4 to 5 ounces in the spring but will double their weight by the fall in preparation for winter hibernation. They exhibit six different calls. The most commonly heard is a high-pitched trill that the ground squirrel uses to alert neighbors and young of danger. Interestingly, research has shown that thirteen-lined ground squirrels are very inconsistent with their warning calls.

Although often called “striped gophers,” thirteen-lined ground squirrels actually belong to the squirrel family, which includes chipmunks, ground squirrels, tree squirrels, prairie dogs, and woodchucks. True (pocket) gophers (*Geomys bursarius* and *Thomomys talpoides*) belong to a different family of rodents.

### General Biology

“Thirteen-liners” are most active during sunny days when temperatures range between 86°F and 104°F. They prefer low-grass vegetation and thus are commonly found in golf courses, cemeteries, parks, yards, roadside ditches, and other open areas with manicured lawns. Agricultural and residential development have actually increased the range of the thirteen-lined ground squirrel in the Great Plains.

Thirteen-lined ground squirrels dig burrows that are 15 to 20 feet long and often have more than one entrance. Escape burrows are shorter and have only one entrance. The burrow entrances are inconspicuous, appearing only as small, 2-inch diameter holes in the ground. Mounds of soil are seldom present at the burrow entrances because the ground squirrels will scatter rather than pile the excavated soil. Active holes may be identified by their clean and well-manicured appearance.

Additionally, the grass around the hole may be well worn from frequent use. Burrow entrances often are plugged at night with grass or soil.

To survive the winter months, thirteen-lined ground squirrels hibernate in their burrows, entering in October and only emerging when the soil warms up enough to allow them to dig out, typically late March or early April.

Both sexes emerge around the same time, but females return to the den for another one to two weeks. Mating occurs shortly thereafter.

After a 28-day gestation period, females give birth to a single litter of seven to 10 hairless young. In six weeks (around mid-June), the young are mature enough to forage outside the den. Male ground squirrels do not assist with rearing of the young.

Thirteen-lined ground squirrels are usually solitary, although they do congregate in loosely structured colonies. In prime habitat, their numbers may reach 10 or more per acre. Their home ranges can fluctuate from three to 10 acres, depending on habitat.

As the first half of their scientific name suggests (*Spermophilus* i.e. seed-lover), thirteen-lined ground squirrels feed on seeds throughout their active season, especially in the fall, in preparation for hibernation. Other plants they consume include grasses, garden vegetables, and flowers. “Thirteen-liners” are not strict vegetarians. Researchers have found that ground squirrels will eat the eggs and young of ground nesting birds, earthworms, lizards, mice, and insects to obtain protein. In fact, during the summer, insects can constitute up to half of their dietary intake. They are particularly fond of grasshoppers and the larvae of beetles and moths.

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## Wrangling Woodchucks and Other Ground Squirrels

By [Stephen Vantassel](#), UNL Extension Project Coordinator for Wildlife Damage Management



Whether you call them woodchucks, groundhogs, whistle pigs, or something else, they can cause extensive damage to gardens and undermine

embankments and foundations. [View this webinar](#), which was recorded on July 19, 2013, and discusses management of chipmunks and thirteen-lined ground squirrels whose activities can conflict with human interests.

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### **Maintaining A Septic System Drainfield**

By [Sharon Skipton](#), UNL Extension Water Quality Educator, and [Jan Hygnstrom](#), UNL Extension Project Manager



Most acreage residents rely on their own private systems for wastewater treatment and disposal. For most, it will be a septic tank used in combination with a traditional drainfield.

### **Understanding Septic Drainfield Design**

In a septic tank/drainfield system, wastewater flows from the household wastewater plumbing into an underground septic tank. There, waste components naturally separate, with heavier solids settling to the bottom forming sludge, and lighter solids floating to the top, forming scum. Bacteria begin to treat wastewater by partially decomposing the solids. The liquid (effluent) flows through the outlet to the subsurface drainfield, also called a soil absorption field, leach field, soil treatment area, or laterals. A system will have a header, drop box, or distribution box between the septic tank and the drainfield to distribute effluent evenly between the drainfield trenches.

The drainfield usually consists of a series of underground parallel trenches. For older drainfields, each trench has a distribution pipe embedded in gravel or rock. Most drainfields installed since the late 1990s have plastic chambers in the trench, and no gravel or rock.

The effluent flows through the distribution pipes or chambers where it moves through holes in the pipe or chambers down into the soil. The soil filters out remaining small solids and pathogens (disease-causing microorganisms). Also, bacteria and other microorganisms in the soil treat pathogens and other contaminants in the effluent. Water, carrying dissolved substances such as nitrate, slowly moves down to groundwater.

### **Drainfield Maintenance**

Proper maintenance of a septic tank and drainfield is critical to keep the system functioning

properly. This protects human health and the environment. In addition, it delays the need to repair or replace a system, thereby saving money.

While the drainfield does not require extensive maintenance, a few precautions will help ensure proper functioning and a long service life. The drainfield should not be inundated with excess water, as extra water will reduce the ability of wastewater to percolate through the soil as needed for proper treatment. The drainfield should not be compacted; compaction will prevent the drainfield from treating wastewater properly. The structural integrity of the drainfield must be maintained. Follow these tips to protect the drainfield.

Do not inundate with excess water:

- Divert surface water runoff from roofs, downspouts, and impervious areas like concrete driveways or patios away from the drainfield.
- Do not add large amounts of water to the drainfield by using automatic irrigation systems. Irrigate only as necessary to maintain the grass cover.

Do not compact the drainfield:

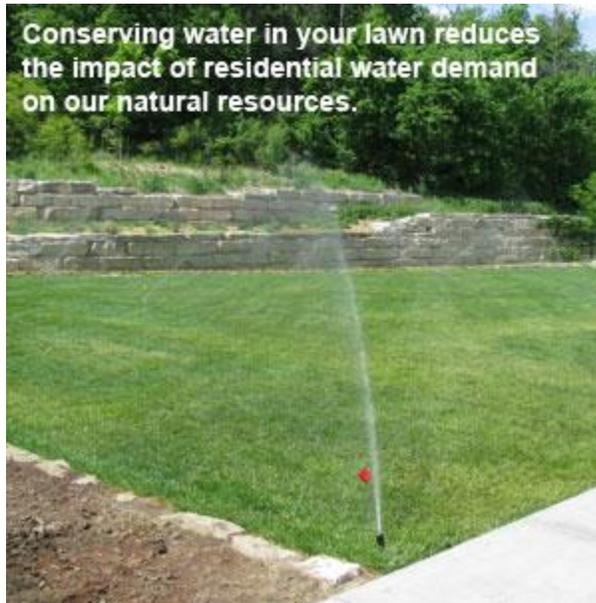
- Do not drive vehicles or agricultural equipment over the drainfield.
- Do not site dog kennels or other animal confinement units over the drainfield.
- Do not construct driveways, sidewalks, patios, or buildings over the septic tank or drainfield.
- Do not place additional soil over the drainfield other than to fill slight depressions. A slight mounding will ensure runoff of surface water.

Maintain the structural integrity of the drainfield:

- Keep rodents and other burrowing animals out of the drainfield area.
  - Take care when planting trees or other deep-rooted plants. Determine the distance from the trunk to the dripline (outermost edges of branch tips of mature plant). Plant the tree or shrub at least twice that distance from the drainfield. Do not plant trees with invasive root systems, such as cottonwoods or silver maples, as they may clog or damage pipes.
  - Establish and maintain grass over the drainfield. Do not plant vegetables or other annuals that require digging in the soil due to potential contact with pathogens. In addition, the soil will be bare at times, reducing evapotranspiration of water to the air.
  - Mow grass frequently to encourage growth.
  - Reserve a replacement drainfield area and manage it the same as the present drainfield.
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## **UNL Drought Website Offers Best Management Practices for Home & Landscape Water Use**

**By Sharon Skipton, UNL Water Quality Specialist, Bruce Dvorak, UNL Biological Systems Engineering - Environmental Infrastructure Engineer, John Fech, UNL Horticulture Extension Educator, Sarah Browning, UNL Horticulture Extension Educator**



Conserving water in your lawn reduces the impact of residential water demand on our natural resources.

In terms of impactful weather, 2012 was a year for the record books, with minimal amounts of rainfall and extreme heat across the state. Over 80 public water systems in Nebraska restricted water use in 2012 as a result of drought conditions and the inability to meet peak demand. Some families with private wells also had difficulty meeting needs.

Drought conditions continue across much of the state at this time, and on July 19th eleven Nebraska communities began restricting water again this year. Mark Kuzila, Director of UNL's Conservation and Survey Division, pointed out that in the case of a multi-year drought, water level drawdowns that may have occurred in an aquifer during the first summer may still exist to some extent at the start of the next summer. He cautioned that, when this situation occurs, the aquifer has less water in storage than normal, and wells that were unaffected the first summer of the drought may experience water supply difficulties in subsequent years of the drought.

In order to help Nebraskans make wise decisions regarding the use of water in and around the home, UNL Extension assembled a group of research based recommendations and features, available 24/7 at <http://droughtresources.unl.edu/waterwise>.

This web site contains ready-to-use information including three newly revised "Make Every Drop Count" publications, new "Water Wise" NebGuides, concise water-wise news articles, water-wise audio recordings, and a 100-Gallon Challenge. The web site will be updated regularly with timely news articles, additional audio recordings, and additional "Water Wise" NebGuides as they are prepared over the summer. In short, this site is a "one stop shop" for information on wise water use in and around the home.

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## Harvesting and Storing Vine Crops

By [Sarah Browning](#), UNL Extension Horticulture Educator



The proper time to harvest some vegetable crops is fairly easy to determine. Tomatoes turn red when ripe. Onions are harvested when the tops fall over and begin to dry. While some vegetables exhibit clear signs, the proper time to harvest other crops may require a little more knowledge and experience. Below are guidelines for harvesting and storing various vine crops.

### **Watermelon**

Harvest when the underside or "belly" of the melon turns from a greenish white to buttery yellow or cream. This color change is especially pronounced on the dark green skinned varieties. It is often less noticeable on lighter skinned watermelons. In addition, the fruit tends to lose its slick appearance on top and becomes dull when ripe.

Thumping or tapping the melon is generally not a good indicator of ripeness. Rapping an immature melon with your knuckles produces a metallic ring. A ripe melon gives off a hollow or dull ring. Most individuals, however, have difficulty differentiating between the sounds.

The browning of the pig's tail (light green, curly tendril attached to the vine near the melon) is also not reliable. In some varieties, the pig's tail may turn brown 7 to 10 days before the melon is ripe. When harvesting watermelons, leave 2 inches of the stem on the fruit. Watermelons can be stored at room temperature for about one week. The storage period can be extended to two to three weeks at 40 to 50 degrees F.



Stem "slipping" on ripe melon.

### **Muskmelon**

The fruit of muskmelon or cantaloupe are mature when the stem pulls (slips) easily from the melon. The melon is not ripe if the stem has to be forcibly separated from the fruit. Other indicators of maturity are based on touch, appearance, and aroma. The flower end (the end opposite the stem) of the melon should be slightly soft. The skin between the netting turns from green to yellow. Finally, a ripe melon produces a strong "muskmelon" aroma.

Muskmelons can be stored in the refrigerator for up to two weeks. Before refrigerating, place the melons in a plastic bag to prevent the muskmelon aroma from favoring other stored foods.

### **Honeydew**

A slight softening of the flower end of the fruit is the best indicator of ripeness. Also, there may be subtle changes in the fruit's color.

### **Pumpkins & Winter Squash**

Pumpkins will rot if harvested too young, or if allowed to stay in the field once they are mature and exposed to freezing temperatures. Mature pumpkins should be uniformly colored across the entire fruit- orange, white, gray or blue- depending on the variety you chose to grow. Look for the mature coloration of your variety indicated on the seed packet as a guide to ripeness. Mature pumpkins have hard, shiny shells that can't be easily punctured by a fingernail. Once your pumpkin reaches this stage, it's time for curing.



With winter squash, the portion of the fruit resting on the ground will be cream to orange. Harvest spaghetti squash when the fruit color changes from ivory white to golden yellow.

Leave the stem on when cutting from the plants to prevent decay organisms from entering. Pumpkins and winter squash will keep best if they are cured for 10 days at 80-85°F. Store fruits in single layer, or on shelves at 50 to 55 degrees F.

Acorn squash, however, should not be cured but stored at 45°F to prevent stringiness.

The maturity of vine crops can also be approximated by counting the days after flowering. It takes approximately 40 to 50 days for muskmelons and 50 to 60 days for large-fruited watermelons to mature after pollination. Acorn squash requires 55 to 60 days, butternut squash 60 to 70 days, and hubbard squash 80 to 90 days . These figures are based on warm weather. Cool weather will slow growth and delay maturity.

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### Minimizing Damage by Fall Webworm

By [Sarah Browning](#), UNL Extension Horticulture Educator



Late summer and fall is the season of fall webworm, which attacks over 85 known species of deciduous trees, including elm, hickory,

pecan, plum, chokecherry, poplar, walnut and willow. In fact, almost all fruit, shade and ornamental trees, except conifers, can be affected by fall webworm.

### **Identification**

Homeowners often spot fall webworm as they enlarge their silken webs in late summer. Adults of this native insect are white moths, with reddish-orange front legs and a 1¼-inch wingspan. Immature insects are pale yellowish caterpillars with red heads and reddish-brown spots. An alternate color variation among the larva is yellow-green caterpillars with black heads a broad dark stripe on the back and black spots. The caterpillars have many long, fine hairs on their backs. There are one to two generations per year in Nebraska.

### **Biology**

Adult moths emerge in late spring or early summer and lay eggs in masses on the undersides of leaves. The larvae emerge 10-14 days later and begin feeding in groups within a small webbed mass of leaves at the ends of branches. The webbing provides protection from some predators and the caterpillars feed inside the web until all leaves are devoured, then additional leaves are encased in the web. Webbed areas of leaves grow larger as the caterpillars mature, becoming a messy, ugly eyesore as it is filled with shed skins, excrement and leaf fragments.

The first generation of caterpillars matures in about six weeks. Then they drop to the ground and enter the soil, where they pupate into adults and reemerge to lay eggs for the second generation. Some larvae may pupae under loose bark, in leaf litter beneath the tree, or within the webbing. Caterpillars of the second generation hatch and feed from approximately early August through late September. Then once again, the mature caterpillars drop to the ground and enter the soil to overwinter. Because the insects overwinter beneath host plants, trees that have been attacked in the past will very likely have insects the following year, too.

### **Management**

Although unsightly, feeding by fall webworms is rarely seriously damaging to large trees so presence of the webbing and insects can simply be ignored. However, several years of defoliation for small ornamental trees could weaken them.

Removal of nests in early summer when only a few leaves are involved is the best method of control. Break up webbing by hand or with a rake, and remove the caterpillars. Or prune out the branches affected, and crush or burn the insects.

Biological insecticides such as *Bacillus thurengiensis*, B.T., are also effective. Spray inside the webbed area; spraying the entire tree canopy is not necessary.

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**Take the “Waste” Out of Acreage Maintenance**  
By [Sarah Browning](#), UNL Extension Horticulture Educator



Many different types of structures, both homemade and purchased, can be used for composting, such as this wooden pallet bin.

Routine lawn and yard maintenance, whether you live in the city or country, is usually on every homeowner’s to-do list. Keeping your property neat and green often becomes a point of personal pride, with all your country neighbors competing for the title of “best-kept homestead”. But there are ways to reduce the time, energy, and money you spend on property maintenance, and minimize landscape waste that does to the burn pile or landfill.

Here’s how you can reduce landscape “waste” and transform it into “wealth”.

**Plan and Evaluate Your Yard**

Reconsidering your routines may require a little time and discipline – as opposed to proceeding as usual. But good, environmentally friendly ideas should emerge. The key is to lessen waste by first rethinking, while still keeping time and fertilizer inputs to a minimum.

**Use Organic Mulches**

Recycle leaves, wood chips, grass clippings, and other yard trimmings as mulch to retain soil moisture, reduce weed growth, moderate daily and seasonal soil temperatures, and reduce soil erosion. Consider investing in a wood chipper, either by yourself or with your country friends, so that woody debris can be chipped and reused.

**Manage Lawn Areas Wisely**

Recycle nutrients by leaving clippings on the lawn where they belong. Returning the clippings for an entire summer results in the application of 1 lb. of Nitrogen/1,000 sq.ft. to your lawn. That’s the equivalent of one fertilizer application, and it doesn’t cost you anything!

If you must collect them, reuse the grass clippings as mulch or compost. Proper care keeps lawns growing vigorously, which greatly reduces disease and pesticide use.

### **Use Leaves as a Resource**

Small amounts of leaves, when shredded with a lawn mower and left to filter down into the grass, are an organic nutrient source. Chopping up leaves also reduces the need for raking. Leaves can also be reused to mulch perimeter plantings or as an ingredient in compost.

### **Fertilize Conservatively and Carefully**

Test your soil and reduce fertilizer use when possible to avoid excessive plant growth. Excessive plant growth = potential yard waste.

Sweep up and reuse fertilizer that falls on paved surfaces. Otherwise fertilizer runs off your property into nearby lakes and streams, contributing to algae and pollution.

### **Direct Downspouts into Planting Beds or Lawns**

Redirect this precious natural resource to your yard rather than the pavement. Runoff from downspouts directed onto paved surfaces carry pollutants like fertilizer, pesticides and motor oil to lakes and streams. A rain garden is a concave planting bed designed to catch rainwater, and allow it to filter down through the soil.

### [Stormwater Management: Installing a Rain Garden in Your Yard](#)

### **Try Natural Landscaping**

Naturalize at least a portion of your yard to reduce maintenance, grass clippings, pesticide and fertilizer usage. Consider seeding perimeter grassy areas with native grass. Add a planting of native shrubs and grasses as a barrier near streams and creeks to prevent runoff of landscape products into the water. Enjoy the attractive alternatives as your property contributes to a richer ecosystem.

### **Plant Ground Covers**

Reduce impractical lawn areas (steep slopes, shady areas, low spots) and keep tree roots moist and cool. Less lawn means fewer grass clippings. It also can reduce your time spent mowing, and the amount of pesticide and fertilizer used.

### [Selecting a Ground Cover](#)

### **Select Plants for Proper Size and Vigor**

Reduce trimmings by selecting semi-dwarf or dwarf fruit tree varieties. Always plan for the mature height of trees and shrubs before planting to minimize pruning needs. Pest-resistant plant varieties reduce both chemical usage and dead wood that must be removed. Match your plant selections to your property's soil, light conditions and topography for optimum plant growth.

### **Create a Compost Pile or Bin**

Recycle excess landscape waste by composting, which speeds up the natural process of decomposition. Compost is a great soil amendment that improves water-holding capacity in

sandy soil, and improves water infiltration in heavy clay soil. It provides nutrients for plant growth, and fosters increased populations of beneficial soil microbes.

Many different types of structures, both homemade and purchased, can be used for composting. Homeowners often used recycled materials, like wooden pallets, to create a compost bin, and using a bin has the added advantage of screening the compost from view.

[How to Build A Compost Bin](#)