One of the by-products of consumerism is waste. According to the U.S. Environmental Protection Agency (EPA), Americans generated about 250 million tons of trash during 2010*. Our trash, or municipal solid waste (MSW), is made up of things such as packaging, food scraps, grass clippings, furniture, electronics and tires. According to the report, the largest component of MSW is organic materials. Paper products accounted for 29 percent, and yard trimmings and food scraps accounted for another 27 percent. The good news is that in 2010 more than 44 million tons of paper (62 percent) was recycled and more than 19 million tons of yard trimmings (57 percent) were composted. Unfortunately, less than a million tons of food scraps (3 percent) were composted.

Not composting food scraps is costly. When processed in a kitchen disposal, the food is transported via wastewater to the treatment plant where it must be separated and disposed of in landfills or incinerated. When thrown in the garbage, the scraps must be picked up, transported and buried in a landfill, all of which require fuel and labor expenses.

Backyard composting offers property owners a proven, cost-efficient and environmentally friendly alternative to landfilling organic wastes. It can be as simple as a pile of shredded leaves in the corner of the yard or as fancy as a concrete, multi-bin facility complete with roof. Plenty of options are available to suit your taste, property size and compost requirements. Need assistance with bin design and construction? Help is as close as the Internet. Many garden centers and online stores offer composting barrels and easy-to-assemble composting bin kits.

Decomposition of organic wastes will occur no matter the size of pile or bin you choose. However, the volume will determine the rate of decomposition. As a general rule, the larger the pile, the quicker it will heat and maintain heat, which is important to ensure a rapid rate of decomposition. A pile 5 feet high (or bin 1 cubic yard in size) is large enough to generate sufficient heat for decomposition, yet small enough to allow air movement into the center of the pile.

The microorganisms responsible for decomposition need oxygen, water, nitrogen and a source of energy (carbon). Oxygen is provided by turning or aerating the pile.
is added as needed to keep the pile moist but not wet. Nitrogen sources include vegetable and fruit scraps, lawn and landscape trimmings, and manure from grass eaters (rabbits, chickens, goats, etc.). Sources of energy include shredded newspaper and cardboard, leaves, straw, and wood shavings.

When forming the pile, it is best to thoroughly mix, not layer, the materials. Mixing facilitates quicker heating. The pile will reach temperatures between 130 and 160 degrees Fahrenheit at the core. As the center cools, the pile should be turned twice a month to ensure continued heating and decomposition of the entire mass. Turning a pile or compost in a bin is typically accomplished using a pitchfork to move the contents to form another pile or to an adjacent bin. In top-fed composting vessels equipped with a lid, a push-pull folding wing compost aerator can be used to mix the contents. Barrel-type composters are rolled to mix the contents.

Heavy rainfall can inhibit decomposition by reducing available oxygen, in addition to leaching nutrients from finished compost. Use a tarp or other means available to shed excess water.

A properly constructed and managed compost pile will be ready in as little as two months during the summer, whereas an unmanaged pile can take up to a year to decompose.

According to EPA statistics, the potential exists to generate millions of tons of soil-improving compost in America’s backyards using readily available organic waste materials. Are you taking advantage of this opportunity? The next time you’re preparing a meal, instead of tossing those overripe bananas and watermelon rinds into the trash, toss them into a compost bin. You’ll be glad you did!


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**A producer establishing** new tall fescue stands with one of the nontoxic (novel)-endophyte-infected tall fescue varieties needs assurance that the seed actually contains viable nontoxic endophyte. Laboratory tests are now available that can detect the presence or absence of endophyte in the seed as well as determine if the endophyte present is a nontoxic or toxic endophyte (one that produces ergot alkaloids that cause tall fescue toxicosis). With nontoxic-endophyte-infected tall fescue varieties, part of the seed cost is for the endophyte. The endophyte in seed is fragile and can lose its viability if improperly stored and, when planted, results in an endophyte-free stand that is not as persistent as an endophyte-infected stand. Endophyte-free tall fescue varieties provide excellent animal performance with no tall fescue toxicosis, but endophyte-free stands are not as persistent as endophyte-infected stands. Tall fescue varieties that contain a nontoxic endophyte provide both good animal performance and good stand persistence.

Seed companies incur additional costs in the processing, packaging and storing of nontoxic-endophyte-infected tall fescue seed to ensure that the purchased seed contains a viable endophyte. This additional cost may add two to four times to the seed price compared to endophyte-free or toxic-endophyte-infected tall fescue varieties.

In 2012, the Alliance for Grassland Renewal (grasslandrenewal.org) was formed, in part to make sure that producers are getting what they pay for when purchasing nontoxic-endophyte-infected tall fescue varieties. This Alliance, made up of university, government, industry and nonprofit groups, was started in Missouri to work toward the replacement of toxic-endophyte-infected tall fescue with nontoxic “novel”-endophyte-infected tall fescue varieties that would improve animal gain and performance.

The Alliance for Grassland Renewal educates producers on tall fescue toxicosis and methods to successfully establish nontoxic-endophyte-infected stands. A major component of the Alliance is the establishment of quality control standards for the new nontoxic-endophyte tall fescue varieties. A standard for seed purity is currently in place. Seed lots must contain 95 percent pure nontoxic “novel”-endophyte-infected seed with only 5 percent of “off-types” or toxic endophyte as well as meet standards for endophyte viability. Seed that meets this standard will receive an “Alliance Approved” sticker on the bag. This important quality standard means that when you purchase and plant “Alliance Approved” tall fescue seed, the resulting stand should be highly infected with a beneficial nontoxic “novel” endophyte.

Additional Alliance standards for animal safety and plant persistence are being developed. To be “Alliance Approved” for these standards will require a source of independent confirmation (a source other than the seed company marketing the seed, such as university trials) that the variety does not cause tall fescue toxicosis and will persist under grazing. If you are in the market for a tall fescue variety, look for the “Alliance Approved” sticker.

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**Forage**

**Alliance provides seed quality control**

by James Rogers / jkrogers@noble.org and Carolyn Young / cayoung@noble.org
Scoring helps assess Bovine Respiratory Disease

by Bryan Nichols / bmnichols@noble.org

The Bovine Respiratory Disease (BRD) Symposium was held July 30-31, 2014, in Denver, Colorado. This meeting is held once every five years to discuss strides that have been made in dealing with BRD. The agenda, among other topics, included discussion on current experiences in the beef and dairy industries, subclinical effects of BRD, and new research on identifying genetic markers that will hopefully aid in identifying cattle susceptible to BRD.

One topic was discussed that cattlemen are always trying to improve upon – how to decide whether or not to pull and treat a calf. The acronym that many use as a guide is “DART,” which stands for depression, appetite, respiration and temperature. If cattle are exhibiting symptoms related to these attributes, they may require treatment, but what magnitude and combination of these symptoms warrants treatment? To start, all producers should form a relationship with a veterinarian to help answer these questions. Below is some information gathered from veterinarians, other professionals and personal experience.

One system presented at the BRD Symposium was designed for diagnosing and treating dairy calves. This system uses six clinical signs, which are classified as either normal or abnormal. The symptoms of cough, eye discharge, respiration and fever (above 102.5˚ Fahrenheit) are each assigned a score of 2 if present. Nasal discharge is assigned 4 points. Calves exhibiting ear droop or head tilt are assigned 5 points. If a calf has a cumulative score of 5 or higher, he is classified as having BRD and is treated. For example, a calf exhibits eye discharge (2 points) and nasal discharge (4 points). This calf has a cumulative score of 6 and therefore is treated. If the calf exhibits nasal discharge only (4 points), then he would be pulled and his temperature would be measured. If the temperature is greater than 102.5˚ F, he would be treated. If the temperature is less than 102.5˚ F, he would not be treated.

When receiving cattle at the Noble Foundation, a similar system is used. Symptoms of BRD include depression/lethargy, unwillingness to consume feed, gaunt appearance, isolation, labored breathing, coughing, nasal discharge, eye discharge, droopy head or ears, and weakness or “knuckling” of hind fetlocks. Cattle are scored as follows: 0 = no symptoms; 1 = mild exhibition of one or two symptoms; 2 = mild exhibition of more than two symptoms or severe exhibition of one or two symptoms; 3 = severe exhibition of more than two symptoms; 4 = very severe exhibition of several symptoms. If cattle score a 1 or 2, they are moved to the chute. If they exhibit a temperature of 104˚ F or greater, they are treated. If the temperature is less than 104˚ F, they are not treated. If cattle score a 3 or 4, they are treated regardless of their temperature.

Using a system such as one of these introduces more objectivity into decision-making. Used in conjunction with adequate recordkeeping, it allows a producer to identify progress. For example, a producer follows the above protocol and does not treat calves that exhibit a score of 2 with no fever. However, that producer’s records indicate that 90 percent of those cattle are being pulled again within the next three days and requiring treatment. This information may justify an adjustment to the protocol or scoring system.

At the heart of this discussion is the need to use data to assist in decision-making. Records help make objective decisions and monitor the success or failure of decisions that have been previously made.
Prescribed Burn Workshop
Prescribed burning is an effective tool in land resource management, but it must be used in a safe and proper manner. This two-day workshop is designed to introduce participants to the various aspects of burning, demonstrate how to conduct a safe burn and give a hands-on experience in a controlled setting. If weather permits, afternoon demonstration burns will be conducted. Participants are welcome to attend one or both days.

9 a.m.-5 p.m.
Noble Foundation Pavilion
No Registration Fee

Backyard Food Security: Small-scale Food Production and Preservation Options for Urbanites
This two-part series will focus on options for growing a variety of fruit, vegetables and caged animals in limited spaces, such as the typical city backyard. The second session will cover topics on the nutritional advantage of consuming fresh and processed home-grown foods, and the various options and costs associated with preserving the harvest.

Part 1: Production Options
Feb. 10, 2015

Part 2: Preserving the Harvest
Feb. 17, 2015

Both sessions:
7-9 p.m.
Southern Oklahoma Technology Center
2610 Sam Noble Parkway, Ardmore, Oklahoma
No Registration Fee

Pecan Pruning Workshop
Attention to detail in the establishment years improves the possibility of early and enhanced production in a new pecan orchard. This workshop provides participants the opportunity to hone their skills by pruning young pecan trees with the experts.

9 a.m.-12 p.m.
Feb. 3, 2015
Mike Bynum’s Orchard
6681 Woodford Road, Springer, Oklahoma
No Registration Fee
Texoma Cattlemen’s Conference:
Prosperity, Volatility and Sustainability

All phases of the cattle industry are experiencing record-high markets. Producers will continue to face challenges and opportunities but at a new and higher level. This year’s conference will provide insight on how to successfully manage livestock operations during these record markets. Beef industry leaders will also discuss sustainability.

For more information or to register, visit www.noble.org/agevents or call Maggie Scott at 580.224.6375. Preregistration is requested.

Texoma Cattlemen’s Conference:
Prosperity, Volatility and Sustainability

Registration and Trade Show: 8 a.m.
Program: 9 a.m.-4 p.m.
March 21, 2015
Ardmore Convention Center
Early Registration Fee: $30 before Jan. 30
Regular Registration Fee: $40 after Jan. 30

Integrity Beef Alliance Meeting

The Integrity Beef Alliance is a cow/calf program with the goal of increasing marketability of ranch-raised calves through increase in brand recognition, addition of stacked value-added traits and volume sales of high quality calves. The winter Integrity Beef Alliance membership meeting will allow producers interested in or new to the program to meet seasoned program producers and to learn about program specifics and the protocol for the coming year.

1:30-4:30 p.m.
March 5, 2015
Noble Foundation Kruse Auditorium
No Registration Fee

Beef Quality Assurance (BQA) Workshop

BQA raises consumer confidence through proper management, education and guidelines for the beef industry. This workshop will give insight into BQA standards for animal care, recordkeeping, nutrition and carcass quality. Participants can become BQA-certified with successful completion of the workshop and a test.

Beef Quality Assurance (BQA) Workshop

1:30-4:30 p.m.
March 5, 2015
Noble Foundation Kruse Auditorium
No Registration Fee
Cross Timbers management creates wildlife habitat

by Will Moseley / wamoseley@noble.org

Plant succession in the Cross Timbers eco-region moves from grassland toward a closed canopy forest if left free from disturbances such as fire. Cross Timbers woodlands are usually comprised of oaks, Eastern red-cedar, elms, hackberry, greenbrier, poison ivy and several other woody plants. As consultants, we work with several managers who tell us that these closed canopy woodlands are left undisturbed because they are good habitat for wildlife, particularly white-tailed deer. In reality, these areas typically only fulfill a small portion of the habitat requirements of white-tailed deer.

Usually, very little herbaceous vegetation grows in mature Cross Timbers woodlands (Figure 1). About 44 percent of a white-tailed deer’s annual diet is comprised of forbs, and, as you can see in Figure 1, very few forbs are available. About 41 percent of a white-tailed deer’s annual diet is comprised of browse (woody plant parts), with acorns making up 8 percent of their annual diet. At first glance, it looks like ample woody vegetation exists for white-tailed deer to eat, but most of it is too high and, thus, unavailable for them to consume. These mature woodlands can produce a lot of acorns, which are very important to white-tailed deer. However, acorns are only available a few weeks out of the year.

One way to increase the available food for white-tailed deer is to introduce a little sunlight. A chainsaw, skid loader, bulldozer, herbicide or fire can reduce the amount of overhead cover and allow more sunlight to reach the ground to promote more herbaceous vegetation. The pictures in Figures 1 and 2 were taken at the same location and angle. Figure 1 was taken on Dec. 4, 2013, and Figure 2 was taken on Sept. 30, 2014. In between taking the two photos, the site was thinned with a chainsaw, leaving only a few oak trees. Stumps were not treated with herbicide to allow them to resprout so they can be browsed by deer. The site was also burned in March as part of a larger prescribed burn. There was no seed added to the soil because most sites have ample seed in the soil bank from when these sites were once prairie.

Usually, prescribed burning alone will not return such dramatic results, due to the low intensity of ground fires fueled only by tree leaves during typical prescribed burning conditions. Herbicides and mechanical treatments are usually needed to remove enough trees to get adequate results. Prescribed burns can then be used to maintain the openings. Mature Cross Timbers woodlands provide cover for white-tailed deer and are used by other animals such as woodpeckers and raccoons, so not all of the area should be thinned. Small openings can be created throughout a property to make more usable space for white-tailed deer and other animals. The openings can also be grazed by cattle since they are now grazeable acres, while the closed canopy woodlands were not.

Managers need to understand the habitat requirements of the animals that they want to promote and manage accordingly. Creating openings provides more edge and usable space for many animals.
Prescribed fire is a practice many landowners use in managing their properties to improve forage quality, improve wildlife habitat or control brush encroachment. Conducting safe burns is important, but issues can arise while burning. One such issue is fire creep. For the purpose of this article, fire creep in the context of burning can be defined as unnoticed smoldering of plant material (e.g., thatch) that is thought to be extinguished. The buildup of thatch along the fireline can cause fire to “creep” across the firebreak, which can result in an escaped fire.

Thatch is a mat of undecomposed, accumulated plant material next to the soil. Thatch in firebreaks is caused by mowing; mashing down tall, dense vegetation; and weather conditions that are unfavorable for proper decomposition of plant material. Dry soil aids fire creep because drier soils heat up easier and will remain hotter than moist soils, keeping thatch nearest the soil surface warm and dry.

When using mowed firebreaks, water is most often applied (creating a wet line) along the fireline to keep fire in its designated area. When thatch is abundant, water may not penetrate thoroughly, leaving a dry layer next to the soil which can remain dry and warm after ignition and initial wet line application has occurred. When conditions become favorable, it begins smoldering and slowly begins “creeping” across the firebreak until it reaches and ignites unburned fuel outside of the burn unit, resulting in an escaped fire. This can happen later in the day when weather conditions change, the burn crew is further along the firebreak, or when the burn unit is thought to be contained and extinguished, and everyone has gone home. This is why it is important to have a backup suppression crew following behind the ignition crew, monitoring the fireline all the way back to the starting point.

Preventing fire creep can be accomplished with different techniques, including: 1) mowing at least twice prior to burning, with intervals between mowings, to reduce the amount of thatch and give the plant material time to break down; 2) raking thatch away from the burn unit, exposing bare soil for a wet line; 3) thoroughly wetting the thatch down to the soil; 4) using a leaf blower ahead of ignition to blow thatch away from the burn unit; 5) where practical, using a lawn mower to blow thatch away from the burn unit; and 6) where practical, creating a bare soil firebreak by disking. Disked strips work well as long as any grass or thatch is properly turned under. If not, fire can creep through the disked strip where plant material is contiguous, escaping outside of the designated burn unit.

Abundant thatch in firebreaks should be monitored throughout the day of the burn and addressed quickly if it begins smoldering. Checking the amount of thatch prior to a burn and deciding in advance how you will deal with it will assist you in conducting a safe burn.
CONTENTs

Page 1  Backyard composting saves landfill space
Page 2  Alliance provides seed quality control
Page 3  Scoring helps assess Bovine Respiratory Disease
Page 4  Upcoming events
Page 6  Cross Timbers management creates wildlife habitat
Page 7  Monitoring thatch prevents fire creep

EVENTS

Prescribed Burn Workshop
Time: 9 a.m.-5 p.m.
Date: Jan. 14-15, 2015
Location: Noble Foundation Pavilion
No Registration Fee

Pecan Pruning Workshop
Time: 9 a.m.-12 p.m.
Date: Feb. 3, 2015
Location: Mike Bynum’s Orchard, 6681 Woodford Rd., Springer, Oklahoma
No Registration Fee

Backyard Food Security: Small-scale Food Production and Preservation Options
Time: 7 p.m.-9 p.m.
Date: Feb. 10 and 17, 2015
Location: SOTC Seminar A, 2610 Sam Noble Parkway, Ardmore, Oklahoma
No Registration Fee

For more information or to register, please visit www.noble.org/agevents or call Maggie Scott at 580.224.6375. Preregistration is requested.