

FARMERS & RANCHERS NEWSLETTER

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Summer 2010

Forage Testing

Hay season is here again, so getting a good hay test should be on your list of things to do. An accurate hay sample can provide you with the amount of protein, moisture, and total digestible nutrients (TDN) in your hay crop. This is a \$12.00 sample but when you think of the information you gain and the money it could potentially save you by being able to tailor your feeding program to your hay, it is quite a bargain.

Forage quality has two important benefits to cows or heifers. First higher quality forages contain larger concentrations of important nutrients so animals consuming these forages should be more likely to meet their nutrient needs from the forages. Secondly, and just as important, animals can consume a larger quantity of higher quality forages. Higher quality forages are fermented more rapidly in the rumen leaving a void that the animal can fill with additional forage. Consequently, forage intake increases. For example, low quality forages (below about 6% crude protein) will be consumed at about 1.5% of body weight (on a dry matter basis) per day. Higher quality grass hays (above 8% crude protein) may be consumed at about 2.0% of body weight. Excellent forages, such as good alfalfa, silages, or green pasture may be consumed at the rate of 2.5% of body weight per day. The combination of increased nutrient content AND increased forage intake makes high quality forage very valuable to the animal and the producer.

There are several good methods of sampling hay for forage analysis. Most nutritionists would prefer to use a mechanical coring probe made specifically for this purpose. The coring probe is usually a stainless steel tube with a serrated, cutting edge. It is one inch in diameter and designed to fit on a 1/2 inch drill or brace. Cordless drills make these tools quite mobile so that the hay bales to be tested do not have to be hauled to be near an electrical outlet. The hay samples are placed in paper or plastic bags for transfer to a forage testing laboratory. Cores are taken from several bales at random to obtain a representative sample to be analyzed. Core sampling tools are available to check out at the Extension Office.

Grab samples can also be obtained and tested. To receive the best information, grab several samples by hand from about 6 inches into the open side of the bale or the middle third of a small round bale. Place the entire sample in the bag. Do not discard weeds or stems, just because they look undesirable. They are still part of the hay that you are offering to the livestock. Be certain to label the forage samples accurately and immediately, in order for the laboratory analysis to be correctly assigned to the proper hay piles or bales. Obviously the more samples that are sent to the laboratory for analysis, the more information can be gained.

Controlling The Feral Hog

Proper control of these animals comes in two forms; trapping and hunting. Before engaging in combat with these animals it is only fair that you should know that these animals are very clever about hiding and avoiding traps, and when they are captured are very aggressive and have a tendency to become very violent.

Trapping

Cage traps are the most effective and commonly used method used to trap the feral hog. This method has been shown to be successful in quickly decreasing the population of hogs in a specific location. Feral hogs are most susceptible to trapping during the winter and early spring when there is a drastic shortage in food supply. Traps can be designed in several different ways depending on size, door design, and roofing. I have some plans in the office if you would like to see them, call me or stop by and have a look. Traps should be equipped with a top because hogs can be excellent climbers and jumpers. They can also pile up in corners allowing pigs to climb out. Traps should be built out of sturdy material able to withstand a lot of abuse and should be attached to the ground firmly. Traps should be baited a couple of days to get hogs accustomed to entering the trap before the trap is set. Bait such as corn, livestock cubes, or sour grain can be used. Traps should be checked every day and approached with caution if one is caught.



Hunting

The feral hog is not classified as a game animal in Oklahoma, but a hunting license is required. Hogs can be hunted in a manner similar to deer hunting. Stands can be placed around food plots waiting for the animals to arrive. Hunters need to be sure that the areas they are hunting is still being used by the hogs. Also hunting with the use of dogs has proven itself useful. Hunting is less successful than trapping in terms of control, because hogs have a tendency to feed at night if disturbed. Night shooting or hunting with dogs at night can be done only with the explicit permission of the game warden.

Using “Wet Hay”

Each night that follows a rainy day in Oklahoma is filled with many bedtime prayers of thanks from farmers and ranchers who have too often experienced drought and short hay supplies. Nonetheless, the timing of the rains may represent a challenge to cattlemen that are trying hard to put quality hay in the bale for next winter’s feed supply. All producers that harvest hay occasionally will put up hay that “gets wet” or bale hay before it is properly cured to keep it from “getting wet” from time to time. Therefore, ranchers and hay farmers need to understand the impact of “wet hay” in the tightly wound bales.

Extra moisture in hay can cause heat inside the hay bale or hay stack. Heat produced by the bale comes from two sources: 1) biochemical reactions from plants themselves as hay cures. (This heating is minor and rarely causes the hay temperature to exceed 110 degrees F. Very little if any damage occurs if the hay never exceeds 110 F.); 2) Most heat in hay is caused by the metabolic activity of microorganisms. They exist in all hay and thrive when extra moisture is abundant. When the activity of these microbes increases, hay temperature rises. Hay with a little extra moisture may not exceed 120 degrees F., whereas, wetter hay can quickly exceed 150 degrees. If the hay rises above 170 degrees, chemical reactions can begin to occur that produce enough heat to quickly raise the temperature above 400 degrees and the wet hay can begin to burn and cause fires. Be wary of the fire danger of wet hay and store it away from buildings and other “good” hay just in case this would occur. Heat damage causes hay to be less digestible, especially the protein. Heat damaged hay often turns a brownish color and has a caramel odor. Cattle often readily eat this hay, but because of the heat damage, its nutritional value might be quite low. The cows may eat the hay like there is no tomorrow, but they will likely do

very poorly on the hay. Testing wet hay may be very important. Hay thermometers (20 inch probes) may be purchased from agriculture supply companies for about \$13.00. This could be a worthy investment, if it allows the producer to prevent a fire. Moldy hay could be a source of mycotoxins that could present several health problems for cattle. Testing the protein and energy content of stored wet hay will allow for more appropriate supplementation next winter when that hay is fed.

It's Cheaper And It Works Just As Good

How many times have you been sucked in by that line only to find out later that if you had only spent that extra dollar or two, you would have had something worth while? But instead you got something that ended up being worthless.

Adjuvant (Surfactants, stickers, spreaders, drift control) are materials that are added to your sprayer tank to increase the effectiveness of the pesticide you are using. How many times have you heard that “**soap works just as good**”? Well, it might, but most won't work as well. First, although soaps are essentially surfactants, they are not as concentrated as surfactants manufactured for use with agricultural pesticides. Household soaps usually have 10- 20% surfactant while Ag. Surfactant has a concentration of 50 to 90 %. This can make a big difference when it comes to enhancing the effectiveness of pesticide activity. Household soaps can also create problems with excessive foaming in the tank and some of these soaps will react with hard water to produce scum and precipitants that can affect pesticide performance. On the other hand most Ag. Surfactants were developed to work in sprayer tank conditions and are not as foamy and will not react with hard water.



Surfactants, or surface acting agents are most often used with herbicides to help a pesticide spread over and penetrate the waxy cuticle of the leaf or to penetrate through the small hairs present on the leaf surface. Since water has a high surface tension it tends to maintain its round, droplet shape when sitting on the surface of the leaf. The surfactant acts to break down this surface tension of the droplet allowing the liquid to spread over the leaf surface. This results in more of the herbicide coming into contact with the leaf and as a result, more of the herbicide gets into the plant.

When you are considering using a surfactant, always consult the label as to the kind of surfactant recommended and to when its addition to the pesticide will help in enhancing the control of the pesticide. Most pesticide companies have spent several years studying how surfactants work with their products and know a lot better than we can guess as to what surfactant will work best with their product. Remember dish washing soap goes in the sink, not the sprayer.

Prevention of West Nile Virus Infection in Horses

West Nile Encephalitis (inflammation of the brain) is caused by a mosquito-borne virus. This virus was first recognized in the United States in August, 1999. Infection with this virus does not always cause illness in animals but can cause fatalities in people and horses. Mosquito vectors (carriers) become infected with the West Nile Virus (WNV) by feeding on infected wild birds. Occasionally, infected mosquitoes can transmit the virus to people and horses when biting to consume blood. Humans and horses are thought to be incidental hosts. Incidental hosts are animals that once infected cannot be a source of infection for mosquitoes or other animals. There have been 24 different species of mosquitoes that have been positively identified to carry the WNV since 1999. From three years of experience tracking West Nile virus in Oklahoma, we have learned that

the “West Nile virus season” is the months of May through November. People are at greatest risk of exposure to infected mosquitoes from July through October in our state.

The "On Watch" program for West Nile virus in Oklahoma has conducted four years of surveillance on wild birds, mosquitoes, horses and people. West Nile virus was first found in Oklahoma in July 2002 in a dead crow and rapidly proceeded to spread throughout the state. During Oklahoma’s three-year experience with West Nile virus, one hundred and twenty-two confirmed cases of human infection were reported; five of whom died and many others were hospitalized. The Oklahoma State Department of Health will no longer conduct routine testing of dead birds since we have learned that West Nile virus poses a risk to people in all areas of the state. Higher rates of disease activity have occurred in the northwestern and northeastern regions of Oklahoma.

The WNV infects the central nervous system of animals and people. Infected horses showing clinical signs of this disease will eventually show neurological signs relating to encephalitis or inflammation of major nerves. The clinical course of the disease will progress from non-specific signs such as fever, loss of appetite, and depression to severe neurological signs. Neurological signs are related to damage to the central nervous system. These signs may include behavioral changes, ataxia (wobbliness), head pressing, excitability, teeth grinding, a lack of coordination, muscle tremors of the face or neck, blindness, inability to swallow, seizures, and coma. A blood test is necessary to confirm a diagnosis of WNV infection in the live horse.

Mosquito control and vaccination of horses may significantly reduce the incidence of contracting this disease. Vector (mosquitoes) control is the most important step that can be taken to prevent the spread of this virus to people and other animals. Mosquito control will involve removing mosquito-breeding sites to decrease the number of mosquitoes hatching which will reduce the mosquito population in a geographical area. Mosquitoes will breed in any water that stagnates for 4 days or longer. During the evening and night hours, avoid using yellow incandescent lights because mosquitoes are attracted to this type of lighting. Those over the age of 50 are at greater risk of developing serious illness. Remember to wear insect repellants, especially those containing DEET or Picaridin and protective clothing when enjoying outdoor activities like gardening, yard work, relaxing on your patio, or other leisure activities, particularly during evening and early morning hours when the mosquitoes that carry West Nile virus are most active. A newly available equine vaccine offers a first line of defense against the disease. The vaccine is a killed virus product given in the muscle. If horses have never been vaccinated, two vaccinations are given 3 to 6 weeks apart to begin the process, then booster shots are given in the early spring and late summer. If a horse develops symptoms of illness suggestive of WNV, it may not be possible to differentiate between a vaccinated horse and a horse naturally infected with WNV. Therefore, it is critical that accurate vaccination records are maintained for each horse receiving the vaccine. The vaccine is restricted to veterinary use only. Contact your local veterinarian about using the WNV vaccine to protect your horses.

Now Is The Time To Collect Fruit Tree Leaves

The most reliable indicator of fruit and pecan tree fertility needs is chemical analysis of the foliage, commonly called leaf analysis. This service is available through the OSU County Extension centers throughout Oklahoma. Leaf analysis may be used to diagnose or confirm a particular nutrient problem in an orchard after symptoms are present. More importantly, leaf analysis can determine nutrient shortages or excesses before symptoms develop and yield is reduced. Frequently, it reveals that certain fertilizers being used are not needed, resulting in a more economical fertilizer program. Pecans, peaches, and apples are included in the OSU leaf analysis program. Each sample will be analyzed for 1) nitrogen, 2) phosphorus, 3) potassium, 4) calcium,

5) magnesium, 6) manganese, 7) iron, and 8) zinc. If the soil pH has not been determined within the past five years, a soil test may be useful. Otherwise, a soil sample will not be necessary unless indicated by the leaf analysis recommendation.

Taking Leaf Samples

Accuracy of diagnosis depends upon accuracy of sample collection. Each leaf sample should represent a condition rather than certain acreage. It may represent one tree or several acres. The trees selected for each sample should be representative of the acreage or condition and the condition should be uniform as to soil and management practices. You must judge the uniformity of your own trees to determine the number of samples necessary for accurate recommendations.

Sampling Guides for Apple, Peach, and Pecan*

1. Collect all leaf samples during **July**.
2. Do not mix varieties or kinds of fruits into one sample. Native pecan trees of a uniform area may be sampled as one variety.
3. Before sampling, inspect selected trees for mechanical injury, mouse or gopher damage, winter injury, or wet feet. These factors could influence nutrient levels without showing the true nutritional condition of the tree or trees.
4. Apple and Peach—Collect 100 leaves for each sample.
5. Pecan—Collect 100 leaflets for each sample.
6. Collect leaves from shoots that are convenient from the ground and located on different sides of the trees. Do not collect leaves from suckers or water sprouts.
7. Do not collect more than two leaves from one shoot.
8. Select apple and peach leaves from the middle of current season's terminal growth.
9. Select the middle pair of pecan leaflets located on a middle leaf of current season's terminal growth.
10. Remove leaves with a downward or backward pull so that the leaf stem (petiole) remains attached to the leaf.
11. Avoid leaves that have insect, disease, or mechanical damage or leaves not representative of the sample.
12. Do not use galvanized containers, rubber gloves, rubber sponges, or allow leaves to contact rubber material to prevent contamination of the sample with various elements.
13. Before the leaves wilt, wash them to remove spray residue and dirt. This may be done by dipping the sample in clear tap water, not exceeding one minute.
14. After washing, spread the leaves out to air dry until they will crumble. This will prevent molding. Do not expose the leaves to direct sun or allow them to heat in a bag while drying.
15. Place the dried leaves in sample bag and submit with a completed information sheet to the Extension Center. One information sheet should accompany each sample.

*Simple leaves are produced on apple and peach trees while the pecan leaves are compound. Each compound leaf actually consists of several leaflets. For simplification, the term leaf is occasionally used to denote leaflet in the case of pecan.

If you would like more information on collecting leaf samples call the office at (580) 332-2153 and request fact sheet 6232 on fertilizing fruit trees.

Fenceline and Spot Treatment Brush Control . . .

Spring has sprung and the trees have begun to leaf out en masse. It is a beautiful time of year, unless of course, those trees that are budding out are unwanted brush scattered across your pasture or in a fenceline. Spring is an opportune time to spot treat brush species with soil applied herbicides. If there are just a few scattered plants invading the pasture, it is easy to treat 20 to 50 trees while you are checking or feeding the cowherd. Over time, you can remove a lot of unwanted brush in this manner. In the following paragraphs, we will explore some methods and chemicals that can be effective in controlling some of the more common brush

problems in pastures and fencelines. Spot-treating brush is a simple process of either applying a liquid or pellets to the ground around the base of the tree. This must be done early enough in the year so that we are assured of getting enough rainfall to move the herbicide down into the root zone of the targeted plants.

Liquids are usually applied with the use of a spot gun. Many of you will have old spot guns lying around that have been used with cattle wormers. I would not suggest their reuse on cattle after you have used them with herbicides. If the spot gun can be calibrated for milliliters or CCs, they work well for applying liquid herbicides. The liquid squirt bottles sold in garden stores to mist down house plants also work well. They usually have a setting for spraying a straight stream and can be used for applying liquid herbicides. Most of the ones that I have used will apply about 1 milliliter (or 1 cc) per trigger pull. If the label calls for 3 milliliters (or 3 cc) per inch of stem diameter to control brush specie, I will apply three squirts from the spray bottle. Be sure and label any container you use for herbicide application with the chemical name and danger warning that fits the label hazard description.

Pellets come in several forms and are easy to apply once you are calibrated. Pellets can be either one large pellet or smaller diameter pellets. You will have to read the label to determine how many of the pellets are needed to be applied to the base of the tree to achieve effective control. Once you have determined the amount of pellets needed, a small container that is marked with the volume of pellets needed for a given area can then be used in dispensing the pellets. It is easy to get lost when applying spot applications and forget which trees have been treated and which ones have not. The obvious way to avoid confusion is to mark the treated trees with something that is easy to see. Flagging tape is readily visible but time consuming, but lasts for long periods. This is convenient when treatments may be weeks or months apart, so that it can be easily distinguished where you have treated and where you have not. An easy and efficient way is to mark the trees with a dollop of shaving cream from a four-wheeler after applying the chemical treatment. This is readily visible and a very quick method of marking the treated plants, however; the shaving cream will not last long so it is a good idea to use some more permanent method of marking the last treatments so that you can distinguish where you stopped.

There are basically three herbicides labeled for brush control as soil applied treatments. Velpar L (hexazinone), Tordon 22K (picloram), and Spike (tebuthiuron). Expect some grass damage any where spot treatments have been applied. Spike 20P (pellets) should be applied at a rate of 2 grams per 10 square feet in the drip line of the tree. Small trees with a 3-foot drip line any direction from the trunk will equate to 9 square feet (3 feet one direction x 3 feet in the perpendicular direction). For Spike 80DF, for spot gun applications to individual trees, mix 2 pounds of Spike 80DF with enough water to make 1 gallon. Apply 8 milliliters per 1-to-2 inches of stem diameter to the drip line of the targeted plant. Spike is also labeled for use in a solo backpack sprayer, see label for details. Tordon 22K should be applied 3-to-4 milliliters of the undiluted chemical per 3 foot of plant height. Do not apply to trees taller than 15 feet. Velpar is recommended at 3 milliliters of the undiluted chemical per inch of stem diameter at breast height, within 3 feet of the stem collar.

Early Summer Deworming of Cows & Nursing Beef Calves Affects Summer Weight Gain

Five deworming trials were conducted at the Eastern Oklahoma Research Station located at Haskell, OK. One trial was conducted each summer for five years. Crossbred cows and their Charolais sired calves were blocked by sex of calf, calf age and cow age then randomly allotted to four treatments: 1) non-dewormed control, 2) deworm calf only; 3) deworm cow only; and 4) deworm cow and calf. Two or three de-worming treatment groups were applied each year, including one control group every year. Each treatment was applied two or three years. Cows and calves were individually identified and weighed in early June. Treated animals

received label-recommended dosages of an ivermectin pour-on. Pairs grazed in rotation seven bermudagrass pastures overseeded with clover at a stocking rate of 2 acres per cow-calf pair during the 144 to 181-day trials. Initial studies indicated that a low worm infection rate was present in the first years. At that time fecal egg counts ranged from 0 to 28 eggs per 3 gram sample of feces.

Deworming cows in late spring had no significant effect on cow summer weight gains up until calf weaning time. The cows (treated or un-treated) all remained in excellent body condition and had very high re-breeding rates. Treating cows, but not their calves resulted in a small advantage in calf weight gains. Treated spring-born calves had significantly greater daily weight gains (0.14 pound/day) even though they were nursing non-treated cows. In other words, just deworming the calves resulted in a 21 pound weaning weight advantage over non-treated controls. If you value the additional gain at \$0.55 per pound, the additional weaning weight will more than pay for the de-wormer. Treated calves nursing treated cows had significantly greater average daily weight gains (0.17 pound/day) than the untreated calves nursing untreated cows. Over the approximate 150-day period this weight gain advantage would total about 25 pounds additional weaning weight to calves in this treatment group. In other words, treating the cow in addition to the calf realized only another 4 pounds of weaning weight. In this study, deworming spring born nursing calves in early summer resulted in significantly greater summer weight gains. Producers with cattle in drier climates, on native range, and with lower density stocking rates may find different results.

Understand And Avoid Heat Stress In Cattle

Understanding and avoiding heat stress in cattle can be a valuable management tool for summertime in Oklahoma. Most areas of Oklahoma have 10 or more days each year above 100 degrees and 70 or more days with high temperatures above 90 degrees Fahrenheit. (Source: 1997 Oklahoma Climatological Survey). This means that most cow calf operations will be working cattle on days when heat stress to cattle is likely. Cattle have an upper critical temperature approximately 20 degrees cooler than humans. When humans are uncomfortable at 80 degrees and feel hot at 90 degrees, cattle may well be in the danger zone for extreme heat stress. Humidity is an additional stressor that intensifies the heat by making body heat dissipation more difficult.

It is extremely important to think about heat stress in making decisions as to when to "work" cattle such as weaning fall born calves. The weaning process can be stressful enough in pleasant weather, but combined with a high temperature-humidity index can be fatal. If weaning calls for cattle to be gathered and put through a working chute for immunizations, implanting, dehorning, or other operations, then a few common sense rules should be followed.

1) During hot weather, cattle should be worked before 8:00 am, if possible. Certainly all cattle working must be complete by about 10:00 am. While it may seem to make sense to work cattle after sun down, they may need at least 6 hours of night cooling before enough heat is dissipated to cool down from an extremely hot day.

2) Cattle that must be handled during hot weather should spend less than 30 minutes in the working facility. Drylot pens and corrals loaded with cattle will have very little if any air movement. Cattle will gain heat constantly while they are in these areas. Therefore a time limit of one-half hour in the confined cattle working area should limit the heat gain and therefore the heat stress.

3) Make every effort to see that cool, fresh water is available to cattle in close confined areas for any length of time. During hot weather conditions cattle will drink more than 1% of their body weight per hour. Producers need to be certain that the water supply lines are capable of keeping up with demand, if working cattle during hot weather.