



Northeast Missouri Ag Connection

Your local link to MU for ag extension and research information
<http://agebb.missouri.edu/agconnection>

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Wet Hay

Summer rains are welcomed by farmers and ranchers alike. However, rain showers can be a challenge trying to put up quality hay for next winter's feed supply. All producers that harvest hay will occasionally put up hay that "gets rained on"; therefore, it is important to understand the implications of wet hay in tightly wound bales.

Dr. Bruce Anderson of the University of Nebraska-Lincoln writes of several cautions producers should keep in mind as they store poorly-cured hay. The extra moisture can cause heat inside the hay bale or stacked hay. This additional heat comes from two sources: 1) biochemical reactions from plants as the hay cures. This source has only minor impacts and rarely causes the hay temperature to exceed 110 degrees Fahrenheit; very little, if any, damage occurs if the hay never exceeds 110 Fahrenheit, 2) much of the heat in hay is caused by the metabolic activity of microorganisms which exist in all hay and thrive when extra moisture is abundant. Hay temperature rises when the activity of these microbes increase. A little extra moisture, may only cause hay to exceed 120 degrees F., however wetter hay can quickly exceed 150 degrees F. Chemical reactions can begin to occur when hay rises above 170 degrees F, this response will quickly produce enough heat to raise the temperature above 400 degrees F causing a fire. It is recommended to store wet hay away from buildings or "good" hay in case fire would occur.

Heat damaged hay creates a brownish color and has a caramel odor. While cattle may still eat this hay, its nutritional value might be compromised. Even though consumption is occurring, the cattle will perform poorly because the heat damage causes hay to be less digestible, especially the protein.

Forage Testing

Testing hay is important but testing wet hay is especially important. Hay thermometers, which are typically 20 inch probes, may be purchased from local agriculture supply companies for about \$15- \$20. The hay thermometer will identify high temperature bales which could prevent a fire. Testing the protein and energy content of stored wet hay will allow producers to appropriately supplement next winter when the hay is fed. Examining or testing the hay for mycotoxins can prove valuable as well. Mycotoxins can occur from moldy hay and may cause health problems for cattle.

Forage analysis allows producers to better supplement cattle, and may also save money by knowing exactly how much additional protein and energy is required for the cow herd. The results give producers the information to work with nutritionists to build an affordable winter supplementation program utilizing the available forage supply.

There are several good methods of sampling hay. Most nutritionists prefer using a mechanical coring probe made specifically for this purpose and available in many Extension offices. Cores are taken from several bales at random to obtain a representative sample to be analyzed. Grab samples can also be obtained and tested. To receive the best information, grab several samples by hand from about six 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 as they are still part of the feed supply being offered to the livestock. It is important to label the forage samples accurately in order for the analysis to be correctly assigned to the proper hay piles or fields.

Livestock extension specialists can help develop feed rations. Also livestock specialists and agronomists can help with the forage sampling.

Source: Gentry Shafer, Livestock Specialist

Spotted Wing Drosophila and Brown Marmorated Stink Bugs

In June 2013, the first adult spotted wing drosophila (SWD) was detected by monitoring traps in Missouri. By early August, infestations of blackberry fruits had been reported, then by mid-August, SWD was reported infesting crops state wide. SWD is a very serious new invasive pest that attacks small fruit crops, some stone fruits (cherry, nectarine, peach) and wild hosts (including pokeweed, autumn olive, crabapple, nightshade, Amur honeysuckle, and wild grape). Raspberries, blackberries, blueberries, and grapes are at the greatest risk. SWD flies look similar to the small vinegar flies typically found around or on fermenting



fruits and vegetables and typically lay their eggs on the fruit. However, unlike native vinegar flies, SWD females have a serrated egg-laying device (ovipositor) to cut a slit into the skin of intact fruit to lay their eggs.

This year, starting in late May, SWD monitoring traps were deployed in at least 22 counties in Missouri and will be monitored on a weekly basis with the data entered on <http://ipm.missouri.edu>. The data will also be posted in the Lincoln University IPM program blog at <http://www.LU-IPM.net> along with information about the presence, distribution, and abundance of SWD on both websites.

Another potentially harmful insect threatening Missouri is the brown marmorated stink bug (BMSB) which has been discussed in previous articles. Large populations have been discovered fairly close in western Illinois during the fall of 2013. So far, only two have been discovered in Missouri but were dead. Brown marmorated stink bug is a voracious eater that damages fruit, vegetables and ornamental crops in North America. BMSB infestations have spread to 41 states and to Europe's farm basket. One trait that makes this stink bug unique from other stink bugs is that it can live through cold snowy winters by making its own antifreeze. Thus, it can live for two years instead of one and it likes to move into people's homes to overwinter.

BMSB will start feeding on a wide range of fruits, vegetables, and other host plants including: peaches, apples, green beans, corn, soybeans, cherry, raspberries, and pears beginning in late May to early June. Proximity to forest is a risk for agricultural crops. Proximity of nurseries to soybean fields has been a risk factor in other states.

The adult brown marmorated stink bug is shield shaped and dark, mottled brown and ranges in length from 14 to 17 mm, roughly the size of a U.S. dime. The last two antennal segments have alternating broad light and dark bands. The exposed abdominal edges also have alternating dark and light banding. Newly hatched nymphs are yellowish, mottled with black and red. Older nymphs are darker with banded legs and antennae, like the adults. When disturbed or squashed, the bugs produce an unpleasant odor.

Source: Wayne Crook, Agronomy Specialist

USDA Releasing Census Data

The National Ag Statistics Service (USDA agency) has the responsibility to carry out a nationwide ag census survey every five years. The initial results from the 2012 ag census were released on May 2, 2014 and more data will be released throughout the year. The schedule indicates the final data will be released November 3, 2014.

The limited released data allows state comparison over the last three census' which are 2002, 2007 and 2012. Since 2007, the number of farms in Missouri has decreased 8%. In 2002 there were 106,797. In number increased slightly 2007 to 107,825 and five years later in 2012 the number dropped to 99,171.

The number of acres in farms has decreased 3% in both 2007 and 2012. In 2002 there were 29.9 million acres in farms in the state, and most recently there were 28.2 million acres, which is a decrease of 1.7 million acres over ten years.

The average size of farms is staying fairly consistent. In 2002 the average size was 280 acres and in 2012 it was 285 acres.

The market value of Missouri farm products being sold has risen substantially. In 2002 the value was \$4.9 billion, and then grew by 51% to \$7.5 billion in 2007. In 2012 the value increased 22% to \$9.1 billion. Farm expenditures have increased quickly as well. In 2002 expenses were \$4.5 billion, then in 2007 they rose to \$6.1 billion and in 2012 it was \$8.2 billion.

National Statistics

Some of the less publicized but interesting facts follow. Organic sales are growing, but are still just 0.8% of total agriculture production. Much of the increase in farm income was from areas with geographically concentrated production such as California, Iowa Nebraska and Texas.

Eighty-seven percent of U.S. farms are operated by families and the average age of the principal operator increased a few tenths of a year to 58.3 years of age. The number of young, beginning operators has increased 11.3% since 2007, from just over 36,000 to more than 40,000. All categories of minority-operated farms have increased with Hispanics being the largest increasing 21% over the past five years.

Summary

The number of farms in Missouri has declined over the past ten years, but the size has stayed consistent. Sales have increased and expenses have followed.

The numbers are important especially on a statewide basis since they are used by many sources to compare the state and also in some cases allocating resources.

The census data can be found online at <http://www.agcensus.usda.gov/Publications/2012/>

Source: *Mary Sobba, Ag business specialist*

Front-End Loader Safety - Transporting Hay

Many people use front-end loaders to move and stack large round bales. Always use great caution when hauling large round bales or any heavy load on a front-end loader so that you can avoid side overturns and being crushed from a bale rolling down upon the tractor.



Front-end Loader Safety Checklist:

- Never walk or work under a raised loader.
- Raise and lower loader arms slowly and steadily.
- Allow for the extra length of the loader when making turns.
- Be careful when handling loose or shift able loads.
- Never move or swing a load if people are in the work area.
- Stay away from the outer edge when working along high banks and slopes.
- Watch for overhead wires and obstacles when you raise the loader.
- Carry the load low to the ground and watch for obstructions on the ground, especially on slopes.
- Always use the recommended amount of counterweight to ensure good stability. Add recommended wheel ballast or rear weight.
- Operate the loader from the operator's seat only.
- Move the wheels to the widest recommended settings to increase stability.
- Do not lift or carry anyone on the loader, bucket or attachments.
- Lower the loader when parking or servicing.

- Make sure detached loaders are on stands that are on a firm, level surface and all safety devices are engaged.
- Prior to use, visually check for hydraulic leaks and broken, missing or malfunctioning parts, and then make necessary repairs.
- Be certain anyone operating the loader is aware of safe operating practices.

Source: *Kent Shannon, MU Extension Natural Resource Engineer Specialist*

Select 2014 Field Days and Workshops

July 16: IPM/Weed Field Day @ Bradford Research Center

July 17: Farmer Technology Field Day @ Bradford Research Center

July 29-30: Crop Injury and Diagnostic Clinic Field Day @ Bradford Research Center

August 5: Greenley Research Center Field Day; @ Lee Greenley Research Center

August 26: Graves-Chapple Field Day @ Graves Chapple Research Center

August 27: Hundley Whaley Field Day @ Hundley Whaley Research Center

September 4: Bradford Research Center Tomato Field Day @ Bradford Research Center

September 5: Goodwater Field Day - Cover Crops, Bioenergy & Sustainable Production @ near Centralia, MO

September 16: Bradford Research Center Ag Education Day @ Bradford Research Center

September 23: Forage Systems Research Center Field Day @ Forage Systems Research Center

September 27: South Farm Research Center Showcase @ South Farm Research Center