Continue Scouting for True Armyworm  
Sarah Kenyon

True armyworm continues to threaten wheat, corn, and grass pastures. Secondary moth flights have been reported and more moths may migrate to the area from winds associated with storm fronts. Region-wide numbers of true armyworm remain low but some localized areas may experience significant numbers; therefore, scouting is still needed.

Small larvae have the potential to damage hay after it has been harvested. Small larvae tend to stay near the soil surface, and can feed on the regrowth after the hay has been removed. Careful scouting is needed to prevent pasture loss.

Treatment is necessary for tall fescue seed fields and grass pastures, and wheat fields when an average of 4 or more half-grown or larger worms (½ inch to 1 ½ inch larvae) per square foot are present during late spring and before more than 2% to 3% of seed heads are cut from stems in tall fescue seed fields.

Corn field should be treated when 25% or more of seedlings are damaged. Control is justified after pollen shed if leaves above ear zone are being consumed by larvae. True armyworm can be a severe pest on field corn and generally cause excessive defoliation and plant mortality.

True armyworm can be identified by the three dark stripes and the orange stripe that run longitudinally down the body. The prolegs also have dark triangular spots, the key identifying characteristic (Top Figure, Source Iowa State University Department of Entomology). Armyworms that have been affected by natural parasites will be dark in color and will be mummified on the plant stalk. The worm will typically be positioned with its head pointed downward and juice may drip from the insect’s mouth (Bottom picture, Source J. Kenyon taken May 2012).

Missouri Dairy Grazing Conference  
July 7-8, 2015  
Springfield, Missouri

The Missouri Dairy Grazing Conference will be held in Springfield, Missouri. It will feature farm tours to local pasture-based dairy operations on day one of the conference. Presentations will be given by university faculty, industry and dairy producers on the latest information related to dairy grazing systems on day two. A trade show is planned for businesses affiliated with this industry to showcase their products and information at the conference.

It is a great opportunity for dairy producers and industry professionals to learn about the latest in grazing systems and network with other producers. Beef producers are welcome at the conference also. Many of the topics of discussion will be of interest to anyone who grazes livestock. For full information on the program and registration visit the Missouri Dairy Grazing Conference web page [http://dairy.missouri.edu/grazing/conference/](http://dairy.missouri.edu/grazing/conference/).

The Search is On for Great Hay  
Ozark Empire Fair Hay Show, Springfield, MO.  
July 30-Aug. 8

Entries are being accepted from now until July 10 for the OEF Hay Show. The hay show gives farmers a great opportunity to enter their 2015 hay and have it tested and subjectively evaluated for quality. The hay show can be an excellent way to advertise quality hay.

To enter a sample contact your local Extension Center where an appointment will be made to have an Extension staff member visits the farm and collect the sample. The sample will be analyzed for moisture, protein, fiber, energy (total digestible nutrients) and relative feed value. The lab work will be done at Custom Lab, Golden City.

The entry fee for the complete evaluation is $21. If a farmer chooses to also enter the Missouri State Fair, an additional $3 fee is charged. Contact your county MU Extension Center for entry details.
Septic Tanks Need Regular Maintenance

Bob Schultheis

“Grandfathered” is a term often used to identify something that does not need to abide by current rules or regulations. Although most rural counties in southern Missouri have no sewage regulations on properties larger than three acres, that does not mean landowners are grandfathered from installing or operating their septic system in ways that protect water supplies.

Septic system failures continue to be a primary polluter of streams, lakes and groundwater aquifers (water-bearing rock formations) in the Ozarks. This can be an underground problem from old leaky steel septic tanks or from soil absorption field lateral lines buried too deep. Or it can be an overland problem from surface runoff of sewage effluent into ditches, ponds, streams, and sinkholes.

Spring and fall rainy seasons are particularly a problem because the restrictive clay soils in southern Missouri get saturated and can’t accept more wastewater from the increasing number of rural homes.

It is fairly easy to tell if a septic tank system has a problem. Sinks will drain slowly, toilets won't flush right, sewage may surface in the yard, drinking water from private wells will have bacterial contamination and you may have family members getting sick.

Television, magazine and Internet advertising would lead you to believe that flushing some yeast, enzymes or other additives down the toilet will magically solve your septic maintenance problems.

We do not recommend use of these additives. Some are damaging to the soil or groundwater. Others are unlikely to pollute groundwater, but interfere with settling of the solids in the septic tank. Additives that dissolve solids in the tank often just move them to the absorption field and plug it, forcing expensive repairs.

Instead, we recommend pumping the tank on a regular basis. How often should a septic tank be checked or pumped? Sludge and scum levels should be checked annually. Depending on the tank's size and number of people in the house, the tank usually needs pumping every 2 to 5 years. Using water conservation measures in the home will help reduce the likelihood of absorption field failure, especially during wet weather. If you have an abandoned metal septic tank, it should be pumped and removed and the hole filled in.

We also recommend owners of private wells get their well water tested at least annually through their county health department. Landowners can find a local office online at http://health.mo.gov/living/lpha/lphas.php.

If you are repairing or installing a septic system, the health department also maintains lists of registered soil evaluators (http://health.mo.gov/living/environment/onsite/ose/) and onsite wastewater treatment system installers (http://health.mo.gov/living/environment/onsite/counties/). These professionals can help ensure the renovated or new septic system will function properly for the soil location you have.


If you have questions on this topic or other engineering concerns, you can reach me at the Webster County Extension Center in Marshfield by phone at 417-859-2044, by email at schultheisr@missouri.edu, or go to our website at http://extension.missouri.edu/webster.

Hay Testing will be Important in 2015

Sarah Kenyon

Wet weather conditions during hay season will likely result in lower forage quality. Because of this it is important to test hay to determine forage quality. Hay should be tested before winter feeding to ensure that the nutrient requirements of the livestock are being met.

Studies have shown that rainfall itself has little impact on hay quality. When hay gets wet there is some nutrient leaching and is dependent on the timing and intensity of the rainfall. If rain occurs soon after the hay is cut, very little loss is experienced. If rain occurs when the hay is dry and brittle more nutrient leaching is possible. Hard, intense rains will result in more leaf loss than slow, steady rains.

The number one factor that impacts forage quality is the stage of maturity during harvest. Frequent rainfall can delay cutting resulting in increased forage maturity, ultimately resulting in reduced forage quality. High quality grass hay should be harvested during the boot stage before seed development.

Wet conditions during hay harvest has delayed hay production, resulting in more mature forage. Have hay tested to determine what production stage the forage can be fed to or to determine if additional supplementation is needed to meet the animals nutrient requirements. Remember, the goal in growing forages is to produce feed that will meet the nutritional requirements of the animals.

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Ergot (Claviceps purpurea) is an airborne fungus that affects grass seed heads. Wet, cool weather followed by high heat and humidity create ideal conditions for ergot growth. Weather conditions this spring have been ideal for ergot development. Farmers should scout their fields and pastures for this disease. Ergot is identified by the presence of hard ergot bodies in the seed of grasses. The ergot bodies look like mouse droppings and are easily visible in the seed head of cereal grains such as barley, oats, wheat, triticale and rye, as well as many common grasses such as timothy, perennial ryegrass, and tall fescue.

When livestock consume ergot they appeared to suffer from extreme heat stress. Cattle may seek relief in shade or stand in water. Other symptoms might include rapid breathing, sloughing of the switches of tails and tips of ears, abortion, and decreased milk production. Livestock deaths may also result when large quantities are consumed.

Ergot produces alkaloid compounds that are toxic to livestock and humans. The toxins constrict blood vessels, increasing respiration rates, raising core body temperatures, and limit blood supply to the extremities. Ergotism can be confused with fescue foot or fescue toxicosis because the symptoms are similar. However, ergot bodies (the ones that look like mouse droppings) have a thousand times more toxic alkaloids than those of fescue toxicosis. Because the toxin concentration is so much more, the animal symptoms appear quicker and are much more pronounced.

If ergot is observed, producers should immediately move livestock from infected fields. Producers may also consider feeding other sources of feed to dilute the amount of ergot that is consumed. Farmers should also inspect hay for ergot bodies. If the hay is infested it can be destroyed or diluted with other feeds.

Ergot alkaloids are toxic to many species, including other ruminants, llamas and alpacas, horses, and even swine, dogs and humans eating infected grains. Ergot poisoning has been linked to human epidemics in the Middle Ages. The alkaloid toxins in ergot are chemically related to LSD, and some scientists suggest that bread made from infected rye may have played a role in the 17th-century witch trials in Salem, Mass., and even the French Revolution.

In 2009 the Department of Agriculture initiated the Mandatory Country of Origin Labeling (mCOOL) rule for beef and pork. This rule was a result of the 9-11-01 terrorist attack on the World Trade Center. It is an attempt to help secure our food supply. As an example, this ruling meant that if beef was raised in Canada or Mexico but harvested and processed in the U.S., in the super market meat display it would have to be labeled “Product of Canada and the U.S.” or “Product of Mexico and the U.S.”. In 2013 the mCOOL rule was modified to be more specific. If the cattle were born in Mexico, raised in Canada, and harvested in the U.S. it would have to be labeled “Born in Mexico, Raised in Canada, and Slaughtered in the U.S.A.”.

Canada and Mexico deemed mCOOL to result in an unfair trade practice and took their grievance to the World Trade Organization (WTO). The WTO agreed with Canada and Mexico, which basically allowed Canada and Mexico to retaliate with tariffs on U.S. products imported into their countries. The U.S. appealed the WTO ruling but on May 18, 2015 the WTO upheld its original decision and denied the appeal. So if legislation is not quickly enacted to repeal or modify mCOOL our major trading partners will be allowed to place tariffs on our products.

It’s interesting that in 2014 congress mandated that the USDA fund research on the impacts of the mCOOL rule on the markets. As a result agricultural economists from Kansas State University and the University of Missouri were assigned to estimate the impact of mCOOL on meat price and quantity. It was estimated that the 2009 ruling resulted in an economic loss of $8.07 billion to beef industry and $1.31 billion to the pork industry in the U.S. These estimates were considered to be over a 10-year period. The study also reported a net loss to American consumers of $5.98 billion for beef and $1.79 billion for pork due to higher retail prices and reduced quantities over the 10-year period.

The 2013 mCOOL ruling was analyzed separately because it increased compliance costs due an increased degree of specificity. The economists estimated that the 2013 ruling resulted in an additional $494 million loss to the beef industry as well as an additional $403 million loss to the pork industry. Consumer were estimated to have lost an additional $378 million and $428 million for beef and pork, respectively. Again these losses were estimated for a 10-year period.

It’s also important to note that mCOOL regulations cover only 33% of the beef and 16% of the pork produced in the U.S. Products such as those sold in restaurants are not required to label according to mCOOL rules. Imagine the economic impact if larger proportions of the beef and pork produced in this country were included in this rule. Hopefully congress will act quickly on this matter before Canada and Mexico enact retaliatory measures, which will have major negative effects on many U.S. industries and consumers.
No Milk
Ted Prorbe
“My cows are calving and coming in the parlor with little or no milk. What do you think could be the problem?” Over the years I have received this question a number of times, usually in September or early October. It’s a question I don’t like to answer because by the time it is asked there is no good solution to the problem. That’s not to say that a solution doesn’t exist – just that the time frame for addressing the issue is already passed by the time the problem is manifest.

So what is at issue with fall calving cows that don’t milk to potential? Endophyte infected (E+) tall fescue and specifically the ergovaline contained in the plant causes a number of problems in cattle that consume it. Most producers are aware that infected fescue reduces forage intake and reduces an animal’s tolerance to heat stress, resulting in lower weight gains and milk production in lactating animals. What some producers don’t understand is that ergovaline also disrupts some of the cow’s endocrine functions. One example of this is the effect ergovaline has in lowering prolactin levels circulating in the cow’s bloodstream.

Prolactin plays an important role in milk production. The dry period is a time when prolactin serves a particularly critical function. During the dry period is when the udder is prepared for a cow’s next lactation. Prolactin is responsible for the growth and development of new milk secreting cells in the udder through this period. If low levels of prolactin are present in the bloodstream during the weeks preceding freshening, udder development is inhibited. As a result milk production in the subsequent lactation suffers and this diminished production can be severe. This condition is referred to as agalactia.

Why is agalactia more prevalent during late summer and early fall? It is important to remember that ergovaline concentrations in fescue are not the same during all seasons of the year. Toxin levels tend to increase during spring and early summer as the plant grows. Levels also vary in different parts of the plant. Concentrations are highest in seed heads and leaf sheaths. It is during the time frame of late spring/early summer that these plant parts are present. Dry cows that graze accumulated fescue growth during the summer months are the most likely candidates for developing agalactia.

It should be noted that growing conditions are another factor that affects endophyte growth. The amount of ergovaline present in fescue can be significantly different from one year to the next. That explains why cows do not display the effects of agalactia to the same extent each fall.

So what can be done to prevent agalactia in fall calving cows? Since the problem develops during the dry period that is the time to take steps toward prevention. Ideally, dry cows should graze forages other than E+ fescue during the summer months. This is particularly true if the forage in the pasture contains older growth that was accumulated during the spring/early summer period. If grazing infected fescue can’t be avoided proper pasture management will help to avoid high ergovaline levels. Grass kept vegetative during the summer months contains lower levels of the toxin than accumulated growth and should be less likely to cause agalactia.

E+ fescue induced agalactia is obviously a major concern for dairy producers. Beef producers should remember however that the physiology of the beef cow is the same as that of dairy cows. Just because beef producers don’t observe lowered milk production in a bulk tank doesn’t mean agalactia doesn’t impact their herds as well. Lowered milk production in fall calving beef cows can have a significant effect on calf growth and weaning weights.

In conclusion, late summer/early fall is often a time when cows exhibit agalactia. The stage is set for experiencing this problem during the cow’s dry period. With that in mind the next two to three months are the appropriate time to take steps to alleviate the potential for experiencing agalactia in fall calving cows.

Let’s Be Safe Out There During Haying Season
Bob Schultheis
Every year, we see or read about farmers being injured during haying season. Did you know….? • The fatality rate for farmers is 700% higher than for other American workers? • Tractors are the leading cause of death on farms? • The most frequent causes of tractor-related deaths are side and rear overturns? • 80% of deaths caused by rollovers happen to experienced farmers? • 1 in 7 farmers involved in a tractor overturn is permanently disabled? • 7 out of 10 farms will go out of business within a year of a tractor overturn fatality? • When used with a seatbelt, rollover protective structures (ROPS) are 99% effective in preventing injury or death in the event of an overturn? Some of the common agricultural hazards are…. • Equipment (tractors, machinery, ATVs, mowers) • Terrain (slips & falls) • Ergonomics (lifting, repetitive trauma) • Noise (tractors, chain saws, shop equipment) • Respiratory (dusts, molds, toxic gasses) • Chemicals (pesticides, fertilizers, fuels) • Animals (temperament, handling facilities) • Biologicals (vet medicines, zoonoses) • Stress & fatigue (lose concentration & focus) • Skin exposures (sun, heat, chemicals, microbes) Here are haymaking safety rules to help keep you out of trouble. • Read the operator’s manual (again). • Be prepared for a fire with 10-lb. Class ABC fire extinguisher on all tractors, charged and in working order. • Keep alert - drink plenty of liquids, eat regular meals, get enough sleep, take breaks. • Replace broken or worn parts. • Make sure all guards and shields are in place. • Always disengage the PTO, shut off tractor engine and pocket the ignition key before dismounting to service or adjust the equipment. • Avoid rushed movements when working close to sharp edges. • Always lubricate sprockets and chains when the machine is turned off. • Wait until all cutter bars, reels, flywheels or conditioning rollers have stopped moving before servicing. • Ensure proper clearance between crimping rollers on mower conditioners. • Make sure the twine is properly threaded, twine arm is adjusted, and in good working condition on round balers. Do not feed twine by hand into the baler. • Always lock and block the baler’s rear gate if you must be underneath it. For more information on this topic, see http://extension.missouri.edu/webster/pres-2015-04-09.aspx