



The Wisest Pursuit



MARSHALL COUNTY RESEARCH EXTENSION

May/June/July 2016

Important Dates to Remember

May 21:	Marshall Co. Spring Swine Show
June 1:	Experimental Field Day - Belleville
June 7:	Wheat Plot Tours
June 7-8:	Tractor Safety
June 15:	Livestock Nominations Due
June 17:	Fair Pre-Entries Due
June 27:	Photography Workshop
June 29:	Cat Show
July 8:	Pre-Fair Judging
July 14-19:	Marshall County Fair
July 14:	Horse Show
July 15:	Beef/Bucket Calf Show
July 16:	Swine Show
July 18:	Sheep/Goat/Rabbit/Poultry Show

Get your Private Pesticide Applicator's Certification now!

For those that have been procrastinating the Private Pesticide Applicator's Certification, NOW is the time to knock it out. The test needs to be taken in the Extension office and is an open book test that consists of 75 multiple choice questions. The book is provided and may be picked up from my office if you would like to look at it prior. Plan for 2-3 hours to complete the exam. Currently, the certification period is 5 years. But, EPA is making changes to the requirements and certification timeline. I am encouraging producers to take the test now! Adjustments may be in place as early as January 2017. There is a \$25 exam fee payable to KS Department of Agriculture.

2016 Wheat Plot Tour

The Marshall County Extension Service in cooperation with Dan and Alex Matson of Centralia and Meadowlark Extension District will be holding the Annual Marshall County Wheat Plot Tour on **Tuesday, June 7**. The tour will begin at **6:00 P.M.** at plot. From Centralia go North on Hwy 187 to 96th Rd (2 miles). The Plot is on the Northwest and will have a water tower to the South of it. There will be 12 wheat varieties and blends to see at the tour. Following the tour, there will be a supper served by the Happy Go Lucky 4-H Club and sponsored in part by Kansas Wheat Alliance.

The Nemaha County Wheat Plot will also be June 7 beginning at 9:00 A.M. The plot is located Southwest of T and 192 intersection, 4 miles West of Sabetha, and has 12 different varieties.

During the wheat plot tour, you will be able to hear about the latest wheat varieties and latest wheat production practices from KSU Extension and industry personnel.

If you plan on attending the Marshall County Wheat Plot Tour, please contact the Marshall County Extension Office at (785) 562-3531, or by email at anastasia@ksu.edu and let us know you are attending by Friday, June 3, so that we have some idea of how many meals to prepare.

If it rains, listen to KNDY 1570 AM/95.5 FM for postponement information.

By attending either plot you will be able to enter at a chance to win a NEW four-wheeler from the Kansas Wheat Association.

Photography Clinic

Marshall County Extension and Marshall County Fair Board is sponsoring a Marshall County Fair Centennial Photo Clinic and Walk. Tom Parker will be conducting the clinic and with help guide the attendees around the fair grounds to capture the 2016 Fair as we celebrate 100 years.

This is open to the public and to all ages. (Youth must have a parent or guardian attend). If you have questions please contact Anastasia Johnson at anastasia@ksu.edu or Georgena Lindquist at bglinq@sbcglobal.net. Please register as soon as possible.

Tractor Safety Course – June 7 & 8, 2016

A Hazardous Occupations Safety Training in Agriculture course (tractor safety) will be conducted on Tuesday, June 7 and Wednesday, June 8 at KanEquip, 18035 East Hwy 24, Wamego. The class will run from 9:00 A.M. to 4:00 P.M. the first day and from 9:00 A.M. to 3:00 P.M. on the second day. The cost is \$30 which includes materials and lunch both days.

The course is taught by KSU Extension Agents from Douglas, Leavenworth, Pottawatomie, Riley, Shawnee, and Wabaunsee Counties and is recommended for youths age 12 and older. Any youth 14 or 15 years old who will operate a tractor for someone other than their parent is required to pass the course to be legally

employed. Youths age 12 and 13 are welcome to participate in the class, but cannot be certified until age 14.

Two hours of practical tractor experience is also required for certification. A parent or employer will supervise the two hours of practical experience at a later date. Actual tractor driving will not be included in the safety course.

The registration deadline to enroll in the Hazardous Occupations Safety Training course is June 1. Contact the Pottawatomie County Extension Office at 785/457-3319 to enroll or register online at www.pottawatomie.ksu.edu.

Mosquitoes: How to Avoid Getting “Bitten” By This “Sucking” Insect

The current wet weather and issues associated with the Zika virus have people “on edge” regarding mosquitoes. However, the common strategies that must be implemented to avoid mosquito bites is the same regardless of the mosquito-disease (e.g. virus) relationship. The three primary strategies that will help to avoid mosquito problems include source reduction, personnel protection, and insecticides.

Source Reduction: First of all, it is important to routinely eliminate or reduce all mosquito breeding sites, which will effectively decrease mosquito populations, by removing stagnant or standing water from any items or areas that may collect water. These include the following: Wheelbarrows, pet food or water dishes, saucers

underneath flower pots, buckets, tires, toys, wading pools, birdbaths, ditches, and equipment. In addition, be sure that gutters drain properly and do not collect water.

Personnel Protection: Protect yourself from mosquito bites by delaying or avoiding being outdoors during dawn or dusk when mosquitoes are most active. Use repellents that contain the following active ingredients: DEET or picaridin. DEET may provide up to 10 hours of protection whereas picaridin provides up to 8 hours of protection. In general, a higher percentage of active ingredient in the product results in longer residual activity or repellency. For children, do not use any more than 30% active ingredient. Furthermore, do not use any repellents on infants less than 2 months old. Clothing can be

sprayed with either DEET or permethrin (pyrethroid insecticide). Afterward, always wash clothing separately. Before applying any repellent be sure to read the label carefully.

Insecticides: For stationary ponds there are several products that may be used, such as, "Mosquito Dunks" and/or "Mosquito Bits", which contain the active ingredient, *Bacillus thuringiensis subsp. israelensis*. The active ingredient is a bacterium that is ingested by mosquito larvae, and subsequently kills them. The bacterium only directly kills mosquito larvae

and has no effect on fish or other vertebrates. Try to avoid making area-wide applications of contact insecticides because these types of applications are generally not effective, and the applications may potentially kill many beneficial insects and pollinators (e.g. bees).

What Does Not Work Against Mosquitoes:

The following items will not control mosquitoes: Mosquito repellent plants (citronella plants), bug zappers, electronic emitters, and light traps/carbon dioxide traps.

When to Harvest Onions & Potatoes

Onions are ready to harvest when about half the plants have tops that have fallen over. This is a sign that the onions are mature and need to be pulled out of the ground. Bulbs may sunburn without the foliage to protect them. The secret to onions keeping well is to allow the tops to dry completely before storage. Move onions to a shaded, well-ventilated area after harvest. After tops are completely dry, store in a cool, dry location. Large-necked onions take more time to dry than small-necked onions such as Bermuda types. Avoid storage in plastic bags because the

lack of air circulation will shorten storage life. Use an open, mesh bag instead.

Potatoes are ready to harvest when the vines are about half dead. Potatoes dug too early have tender skins and are easily bruised. Delaying digging will allow the soil to heat because it is no longer shaded by foliage. High soil temperatures can lead to sprouting potatoes. Allow potatoes to "set" by keeping them in a shady, dry location for a day or so. Move them to a cool, moist environment such as a cellar or cool basement for longer storage.

How Healthy is My Tree?

One of the most important clues in determining the health of your trees is the amount of new growth that tree produces. A healthy tree should have a minimum of 4 to 6 inches of new growth each year. Check branches with the tips in the open and not shaded by the tree itself. Anything less than 4 inches on the majority of branches suggests the tree is under a great deal of stress.

So, how do you tell where the new growth stops? Look for a color change in the stem. New growth is often greener than that from the

previous year. There is also often an area of what looks like compressed growth where growth transitions from one year to the next.

Lastly, look at leaf attachment. Leaves are only produced on current seasons' growth. Therefore, new growth stops where leaves are no longer attached directly to the twig but to side branches. However, pay attention as leaves may appear to be attached directly to last year's growth but are actually borne on short spurs. If you look closely, you can tell the difference.

'Staggering' Sweet Corn Planting

Sweet corn is one of those crops that is only "good" for a few days. If you want longer periods of production, consider staggering the planting. In other words, plant a small block, wait a period of time, and then plant the next block. Though it is tempting to follow a calendar schedule, such as planting a small block every

week, it is better to use crop development as a trigger. If you plant on a calendar schedule, you may have noticed that later plantings often catch up with earlier ones. Instead, plant the next block of sweet corn when the previous one is one-half to one inch tall.

Fireblight on Apple and Pear

Fireblight is most common on ornamental pears, fruiting pears, and apples. Symptoms of fireblight include blackened, blighted shoots scattered throughout the tree crown. The shoots may have the classic Shepherd's crook where the blighted tips bend downward. There may be small amber droplets of bacteria on the stem. This late in the season, antibiotic applications are not effective in controlling the disease. It is important, however, to control insects that may become contaminated with the bacterium and/or create wounds for infection.



During the summer, prune out the blighted tips during dry weather. Make your pruning cut 10 to 12 inches below the discolored area of the branch. Disinfect pruning equipment between cuts with a 10 percent bleach solution, rubbing alcohol, or some other disinfecting agent. If using bleach, be sure to clean and oil equipment after use because bleach is corrosive. Some people prefer the ugly stub method and snap the branch off below the blighted area. This helps someone see at a glance where fireblight occurred in the tree and will facilitate follow-up pruning during the winter

Lady Bird Beetles

Both the adults and the larvae of the ladybird beetle are beneficial and do not feed on plants but rather on other insects including aphids, mealybugs, whiteflies, scale insects, and the eggs of various other insects.



So if you see these insects, do not spray. The larval form looks like a very small alligator-shaped insect. Larvae are covered with spines, about 3/8-inch long, and black with orange markings.

Watering May be Needed This Summer

Rain saturated soils can damage root systems. Excess water drives oxygen out of the soil as pore spaces are filled with water. Every living cell in a plant must have oxygen to live. If there is no oxygen, roots will die. Therefore, many of our plants may need to be babied through the summer.

Newly planted trees are especially vulnerable as they have not established the extensive root system needed to absorb enough water during hot, dry, windy summers. Even trees two or three years old should receive special care even if the root system was not damaged by saturated soils.

Deep, infrequent watering and mulching can help trees become established. Newly transplanted trees need at least 10 gallons of water per week, and on sandy soils they will need that much applied twice a week. The secret is getting that water to soak deeply into the soil, so it evaporates more slowly and is available to the tree's roots longer. One way to do this is to drill a small hole (1/8") in the side and near the bottom of a 5-gallon bucket and fill it with water. Let the water dribble out slowly next to the tree. Refill the bucket once, and you have applied 10 gallons. Very large transplanted trees and trees that were transplanted two to three years ago will require more water.

A perforated soaker hose is a great way to water larger trees, a newly established bed, or a foundation planting.

In sunbaked soil, you may need to rough up the surface with a hoe or tiller to get water to infiltrate easily. It may be helpful to set the kitchen oven timer, so you remember to move the hose or shut off the faucet. If you are seeing surface runoff, reduce the flow.

Regardless of method used, soil should be wet at least 12 inches deep. Use a metal rod, wooden dowel, electric fence post, or something similar to check depth. Dry soil is much harder to push through than wet. Record the time that was required to reach 12 inches and then use a time clock for any future waterings.

Bagworms

From about mid-May through the end of June, larvae hatch. In a short time, seemingly overnight, heavy populations of large larvae may completely defoliate a tree. The best time to remove bags is during the winter when bags stand out and should be completed by late April or early May before larvae hatch and begin to feed. Handpicking any small caterpillars (along with their accompanying bag) and placing them into a container of soapy water will kill them directly. Typically bagworm larvae will begin emerging from the overwintering bag by mid- to late May.

Once a bagworm outbreak has reached damaging levels an insecticidal application is needed to eliminate bagworm larvae. The key to

dealing with bagworms when using insecticides is to make applications early and frequently enough in order to kill the highly susceptible young caterpillars that are feeding aggressively on plant foliage. Applications can begin now with repeat applications occurring 2-3 weeks later to kill any newly hatched larvae.

Thorough spray coverage of all parts of the tree is essential to reduce bagworm populations. Insecticides must be applied with sufficient sprayer pressure and in adequate amounts of water to ensure penetration of dense foliage. Currently there are over 500 products registered in Kansas for use against bagworms. Users should visit the local stores for availability.

Dealing with Anaplasmosis in Cows

Historically, anaplasmosis in Kansas has been diagnosed in the counties east of and including the I-35 corridor. Unfortunately, this is no longer the case. Are there more cases of anaplasmosis creeping west in Kansas or are our improved diagnostic tools and our awareness of the disease helping us do a better job of finding this problem in our cows? Or is it a little bit of

both? With cows being routinely hauled into and out of disease endemic areas on an annual basis for summer grazing and reports of strains of *Anaplasma marginale* that are resistant to chlortetracycline, one can see why the prevalence is increasing in Kansas.

Anaplasma marginale is a blood parasite that is spread by wood ticks, dog ticks, horse flies,

deer flies, stable flies, and fomites such as injection needles, tagging tools, tattoo pliers, and other instruments that may be contaminated with blood. Cattle and the male wood tick are the primary reservoirs of the disease, with the organism multiplying in the salivary gland of the male wood tick. In Kansas, clinical signs of the disease are seen late summer through the fall months. These signs are the result of a marked anemia caused by *A. marginale* including open mouth breathing, staggering, and an aggressive attitude which are attributable to hypoxia created by the anemia. Other signs are yellow membranes of the eyes and vulva, abortion and death of mature cows. Death of mature cows during late summer and fall is one of the more common signs of anaplasmosis.

Many producers use chlortetracycline (CTC), a feed grade antibiotic, to prevent, control, and treat anaplasmosis in their cows. On January 1, 2017 the Veterinary Feed Directive (VFD) that will go into effect will require a producer to have a VFD signed by their veterinarian and filed with their feed supplier before they can purchase CTC. Extra-label use of feed grade antibiotics will not be allowed and certainly will not be prescribed by a veterinarian in the VFD era.

Chlortetracycline is labeled for “the control of active infection of anaplasmosis.” Control, by Food and Drug Administration definition, means that signs of clinical disease are present in the herd and the antibiotic is being used to control the spread of disease to other animals in the herd. In the case of anaplasmosis, if CTC cannot be used until clinical signs of the disease are present, the producer is “behind the eight ball”. If the use of positive blood tests is allowed in order to document “active infection” and thus allow “control” strategies to begin would be a

step in the right direction. At this point, we do not know if this will be allowed by FDA.

Other strategies that can be utilized in the control of anaplasmosis include tick control, fly control, and being diligent in avoiding the transfer of blood from animal to animal via needles, tattoo pliers, and other instruments. Insecticide pour-ons can aid in the control of both ticks and flies. Reducing and eliminating potential breeding sites is necessary for proper fly control. Studies indicate pasture burning reduces tick numbers however, anecdotal reports following burning indicate that ticks are driven to the draws during burning.

A killed, provisional use anaplasmosis vaccine is currently being produced at Louisiana State University. This vaccine was a federally licensed product at one time but a change in marketing strategy by the sponsoring pharmaceutical company removed it from the market. The vaccine is reported to not prevent infection by *A. marginale* but will reduce the clinical signs of the disease. The use of this vaccine must be authorized by the state veterinarian. Once again, more questions that need to be answered.

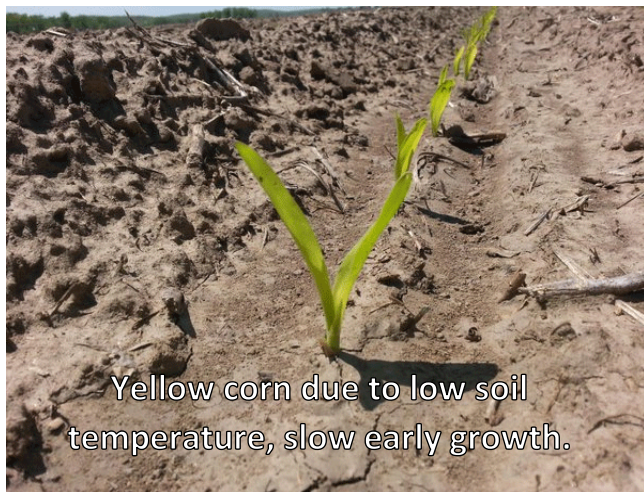
As you can see, anaplasmosis is a growing concern in the state of Kansas. The disease is being reported in more counties than three years ago. There are questions about how we are going to be able to use CTC after January 1, 2017, as well as questions about use of the killed vaccine and how to control ticks and flies. Communicate with your veterinarian as you seek answers for your questions. KSRE and KSU CVM are both committed to helping the producers and veterinarians in the state of Kansas answer these questions.

Diagnosing Early-Season Growth Problems in Corn

Getting a good stand of corn, with vigorous early-season growth, is the first step in getting good yields. When adverse conditions, such as a

hard rain or unusually cool weather, occur after planting and emergence, producers should get out in their fields and take a close look at how their corn is doing.

If the plants emerged in good fashion, but the seedlings then have problems maintaining adequate growth and development or leaf color, there may be several possible reasons. A few of the most likely causes include:



Freeze damage. In most cases, much of the corn that is emerged at the time of a freeze will recover with minimal damage. However, some of the new growth may have a hard time emerging from the dead tissue. New growth may become trapped and start to split from the side of the leaf sheath. Generally, warmer temperatures will increase growth rates and new leaves will eventually split the dead tissue, emerge, and continue to grow normally.

Unusually cool temperatures, compacted soil, or waterlogging. Wet soils and unusually cool temperatures can inhibit root growth, especially slowing plant development. This can cause yellowed, wilting plants due to poor root growth, drowning, or a seedling blight infection. Seedling blight is often characterized by stem tissue near ground level that is discolored or water-soaked in appearance. Also, planting in wet soil can compact the seed furrow, inhibiting root growth. A shallow compaction layer can slow early root growth, resulting in stunted, nutrient deficient plants.

Early-season lodging (“floppy corn syndrome”). This is usually associated with hot, dry weather during V1 to V6, which prevents adequate development and penetration of nodal

roots. Plants can survive for a time on just the seminal root system, but they will have little mechanical support. Reasons for poor nodal root development and an elevated crown include sidewall compaction, erosion after emergence but before nodal root development, and sinking of the seedbed due to pounding rains. Often a good soaking rain is enough to allow nodal roots to establish and plants to recover. Inter-row cultivation can be used to push soil against plants with exposed crowns.

White grubs or wireworms. These soil insects may be eating the roots, which will cause the plants to wilt.

Black cutworms. These insects, which can be found in the soil or on the surface, cause “window paning” of the leaves on young plants. Cutworms may also cut off seedling plants at the soil surface.

Flea beetles. These tiny leaf-chewing insects can cause “scratches” on leaves. Eventually, the leaves may shrivel, turn gray, and die. Plants are more susceptible to flea beetle injury when temperatures are cold and seedling growth is slow. Seedling plants are often able to recover from flea beetle injury because the growing point remains below ground level until the fifth leaf emerges.

Poor growth that occurs as circular to oval patches in the field could be an indicator of nematode problems. Approximately 35 days after emergence is an ideal time to sample for nematodes, particularly the root lesion nematode that inhabits about 80 percent of Kansas corn fields. Take 20 cores at a depth of 12 inches from directly in or alongside the row from the outer edges of affected areas. Additionally, 2 to 3 root balls of affected plants should be submitted at the same time. Bag the root samples separately from the soil cores. Samples can be submitted through local Extension offices or sent directly to the Plant Disease Diagnostic Lab in Throckmorton Hall.

Free ammonia from an anhydrous ammonia application. This can injure roots and

kill germinating seed if the ammonia was applied too shallowly (especially in coarser soils), too close to the time of planting, or if dry soil conditions slowed the conversion of ammonia to ammonium. One way to minimize damage is to apply the ammonia at a 10 to 15 degree angle from the direction of planting. If injury occurs then it is more randomly distributed, reducing the multi-plant skips, and allowing the unaffected plants to compensate.

Ammonia injury can also occur when sidedressing anhydrous ammonia under dry soil conditions. Root injury can occur if the plants get too big or the knives run too close to the row. Ammonia injury resulting from poor soil sealing can cause leaves to appear watersoaked or have dead margins. Roots may appear sheared off, or burned off. Plants will normally recover from this injury, but yields can be reduced.



Putting an urea-based N fertilizer in contact with the seed. Urea will hydrolyze into ammonia and injure the seedling.

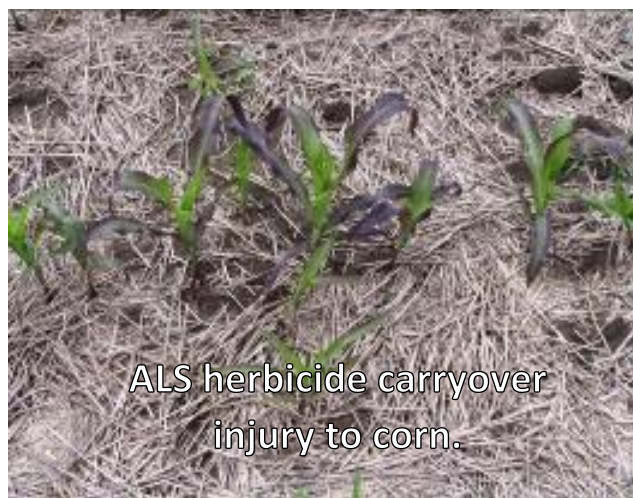
Nitrogen (N) deficiency. This does not usually occur until a later stage of growth in conventional tillage systems. But in no-till corn, especially in high residue situations, N deficiency is common where producers haven't applied nitrogen as a starter, or broadcast a significant amount of N prior to or at planting. In early planting in very cold soils where no N was applied close to the seed as a starter, seedlings may be N deficient in conventional-till also. Nitrogen

deficient corn seedlings will be spindly, with pale yellow-green foliage. As the plants grow, the lower leaves will "fire," with yellowing starting from the tip of the leaf and progressing back toward the stalk.

Phosphorus deficiency. This can result in stunted growth and purple leaves early in the growing season. Phosphorus deficiency is often enhanced by cool, wet growing conditions.

Iron deficiency. This can cause upper leaves to be pale green between the veins. Iron deficiency is more common on high pH and calcareous soils.

Sulfur deficiency. This can result in stunted plants having pale green leaves, with no distinct pattern on the leaves.



Herbicide injury. This is not as common now as in the past, but can still occur. Corn is very susceptible to injury from carryover sulfonylurea herbicides which may have been applied to a previous crop, such as wheat. Carryover depends on soil pH, soil texture, application rates, rainfall, and other factors listed on the herbicide labels. Symptoms include stunting, chlorosis, and an overall sickly appearance. Corn will not grow out of this type of injury.

**Be sure to like the
"Marshall County Extension Service"
facebook page for timely information.**