

CHECK YOUR BULLS OFTEN

The breeding season for many cow/calf producers in Missouri is in full swing or winding down. Many herd bulls went through fertility checks in preparation for turnout. However, another key point, after bull turnout, is continual monitoring of the bull battery. Check and recheck your cows and bulls. Ask yourself: "In the last seven days, how many times did I check the cows and how many times did I check the bulls?" Avoid those disasters of having a large number of open cows at preg check time in the fall.

How many producers really check their bulls? Is the fertility test a quick stop at the local veterinarian on the way to the cow pasture? A lot can be accomplished by simply assessing the "vim and vigor" of the bull. In many cases, producers give their attention to the cows and the bull is an afterthought.

If calving is complete, cows should be cycling. In fact, a quick check of the cows can be made by remembering that the average estrous cycle of the cow is 21 days. If all the cows are cycling, about 5 percent should be expressing "heat" each day (one day divided by 21 days). I realize, not all the cows calve the first 21 days of the calving season. In fact, typically only 58 percent of the cows calve the first 21 days of the calving season. For typical producers who expose a mature bull to 30 cows, at least one cow should be in heat every day early in the breeding season.



If calf gain is 2.3 pounds per day while nursing, every time a bull misses a cow in heat it will cost the producer over 48 pounds of calf weaning weight. Most producers do not argue the value of the bull, but the magnitude of that value is often underestimated.

Not only are the genetics of a bull important but his ability to breed is equally critical. Unfortunately, most cattle are bred out on pasture and daily surveillance is not possible. But do stay alert.

As the second-cycle cows (those cows that calved later in the calving season) start to cycle, the typical producer would have 27 percent of the cows calving within the second 21 days of the calving season. If the mature bull is exposed to 30 cows and everything is going right, 17 or 18 cows (58 percent) should have already settled with next year's calf in the first cycle. That leaves eight or nine cows to breed in the second 21-day period of bull exposure.

Do the math. For the bull that was breeding at least one cow a day during the first 21 days, the same bull during the second 21 days of the breeding season will now only be breeding one cow every other day. In other words, the typical bull should be half as busy during the second half of the breeding season.

Stay alert. If the bull is breeding at a similar or greater rate after being exposed to the cows for three weeks, you may have a problem. Therefore, close observation is a must.

Source: *David Hoffman, Livestock Specialist*

Abused and Neglected Pastures – Where Do I Start?

Sometimes you end up with pasture land that has been abused and neglected. Maybe you've rented it, bought it or inherited it. Now where do you start? First, take a walk across the pasture to assess what you have. While you're at it, take a soil test, because there's a good chance that it is low in several things. Take a close look at what is growing out there. At first glance you may think that there is no good grass out there but at closer inspection, a hands-and-knees look, may show you that there are actually stunted fescue plants there. The pH and/or fertility may be so low that they just aren't growing.

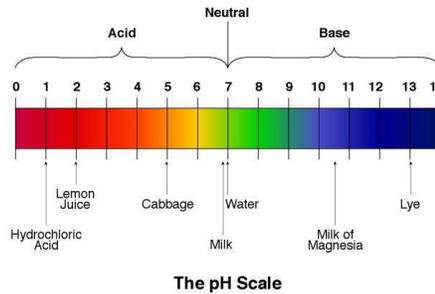
Maybe there aren't any desirable forages out there and you do need to think about drilling in some grass. Overseeding with legumes helps improve the forage quality and reduce fescue endophyte problems. If the pH and fertility are low, lespedeza would be preferred to clovers till you can get things corrected.

While you're walking, look at the weed situation. Broomsedge, also called poverty grass, is an opportunist. You can recognize it by the one to two-foot tall orangey-tan seed stalks. In the early spring you might find a short grass with soft, very fuzzy leaves. This is downy brome, another low quality grass. You can recognize it in early summer by its foot-tall seed stalks with fluffy seed heads. If the good forages are absent or stunted, these weeds will come in. Improving pH and fertility and planting desirable forages, if needed, will get rid of them over time as they outcompete it.

Annual weeds such as ragweed, pigweed and croton are easily killed if sprayed with 2,4-D when they are small but the best approach is to thicken the forage stand so they don't germinate. Many biennials, such as the thistles, are easily killed if sprayed while they are in the rosette stage. Perennial weeds such as horse nettle may be more difficult as are the woody or brushy weeds

like blackberries, sericea lespedeza and multiflora rose. Blackberries and sericea lespedeza will require several treatments over a number of years. Sprays for all these broadleaf weeds will also control desirable legumes. So overseeding with legumes may have to wait until the weeds are under control. It may be possible to spot spray areas with bad weed problems or work on part of the field at a time. That way you don't take out all the legumes at one time.

So work on pH and fertility; add forages, if needed, and control the weeds, if needed. Good pH and fertility will stimulate a healthy, thick stand of grass and legumes and that will go a long way toward eliminating or weakening weeds.



Source: Pat Miller, Agronomy Specialist

Got calcium?

Your tomatoes need it

Your beautiful tomato plant is setting fruit and soon has nice green tomatoes. Then, to your horror, a dark, sunken spot shows up at the bottom of the fruit. You might think an insect or disease has attacked your plant. But that's not the case. It's actually a physiological disorder called blossom-end rot that is caused by a calcium imbalance.

Plant cells have rigid cell walls. To build those walls, the plant needs calcium.

Calcium is to cell walls what the cement is in a brick wall. It gives it structural strength. After being taken up by the roots, calcium moves through the plant in the vascular tissue via "mass flow." The latter requires water. If there isn't enough water to carry the calcium or enough calcium to be carried by the water, then the mineral cannot reach the distal (blossom) end of the fruit, and those walls break down. The result is a dark, sunken spot.

One of best ways to control blossom-end rot is to test the soil before you plant your tomatoes.

In most Missouri soils, if the pH is at the ideal level of 6.2-6.5, there likely is sufficient calcium in the soil. If a soil test shows the pH is fine but the soil still needs calcium, then adding something like calcium sulfate, also called gypsum, will boost the calcium levels without changing the pH.

Improper watering typically causes blossom-end rot. With all the rain this year, our tomato plants are nearly drowning. Oddly enough, a plant that is overwatered has difficulty taking up water. It's called water wilt. When plants are standing in water, their roots don't get enough oxygen. This damages the cell membranes and the roots can't take up sufficient water to deliver needed calcium to the fruit.

Poor soil and improper watering aren't the only causes of blossom-end rot. We can also cause it by damaging the roots while weeding. If the root system is damaged, it cannot take up sufficient water and calcium. You will find that gardeners who get a new rotary tiller will often have blossom-end rot. They cruise up and down the rows churning the soil with their new toy, which frequently results in excessive root pruning.

Fertilizing tomatoes incorrectly can cause the disorder too. There are two forms of nitrogen that can be taken up by the plant: ammonium form, which has a positive charge, and nitrate form, which has a negative charge. The nitrate form is preferable for tomatoes.

If we feed excessive amounts of ammonium-form nitrogen to tomatoes, its positive charge confuses the plant because calcium has a positive charge. We call that nutrient antagonism. Ammonium will keep the plant from taking up adequate calcium. Thus, you should avoid urea fertilizer which converts to ammonium form of nitrogen.

Many products sold as tomato fertilizer contain urea, so be sure to read the label.

An ideal fertilizer to feed tomatoes is calcium nitrate. We're giving the plant the nitrate it wants, and as we're doing so, we're adding some calcium to counter blossom-end rot.

For more information from MU Extension on lawn and garden topics, including downloadable guides, articles and online resources, go to <http://extension.missouri.edu/LawnGarden>.

Source: David H. Trinklein, Horticulture State Specialist

Sericea Lespedeza in Hay Fields

Sericea lespedeza is a perennial plant, unlike common or Korean lespedeza commonly used in pastures and hayfields. It is a prolific seed producer, and produces chemicals which inhibit the growth of other plants. From a forage standpoint, it produces compounds called tannins which bind protein, making them unavailable for digestion by livestock. These tannins also dramatically reduce palatability. Interestingly, there are varieties of low-tannin sericea lespedeza that have been effectively used as forage in pasture settings. Unfortunately, those are not the varieties commonly seen in our part of the world.

If sericea lespedeza is in a hayfield, can the field be harvested for hay? The short answer is yes, but there are some things producers need to know. First, it is recommended that sericea be harvested for hay when the plant is about 12 to 18 inches tall. This will maximize quality and possibly reduce palatability issues for early cut forage. Second, flowering and seed set occur in mid to late-summer. If the sericea has not set seed, it is unlikely to spread into hay feeding areas. However, producers should monitor these areas for sericea and other weeds and treat problems as they arise. If it does get a toehold, producers should aggressively target the elimination of plants as soon as they are noticed.

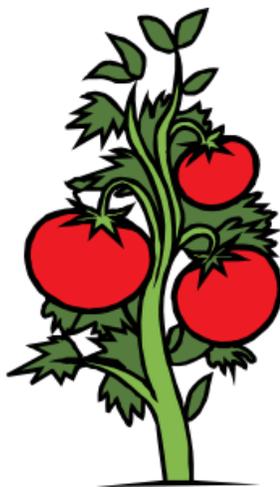
Based on research from K-State, tannin content peaks in late summer. Tannin content was found to be less in sun cured hay than in fresh vegetation. However, additional research at K-State found that tallgrass prairie forage containing about 20 percent sericea lespedeza harvested in late July, which corresponds to the budding stage of sericea and highest levels of tannin content, markedly decreased hay dry matter intake of cows compared to cows fed non-contaminated hay. Within 9 days of being fed sericea contaminated hay, forage dry matter intake was seven times less compared to cows being fed non-contaminated hay.

So, the implications of harvesting and feeding hay contaminated with sericea lespedeza include reduced hay intake, and cattle sorting out the sericea due to reduced palatability. Sericea will probably spread if hay is harvested when seeds are present.

Sericea lespedeza should be controlled in hay fields and other areas. Hay harvest or mowing will not control the spread of sericea in hay fields. MU weed specialists have identified several chemical treatments that are effective in controlling this noxious weed. Choice of chemicals is related to the time of year and stage of plant maturity.

If you are unsure about what this plant looks like, it can be viewed at <http://weedid.missouri.edu> and scroll down to sericea lespedeza for more information.

Source: Gene Schmitz, Livestock Specialist



Mizzou Pest Management Field Day is July 16

The annual Mizzou Pest Management Field Day will be Thursday July 16th at the Bradford Research and Extension Center, approximately 8 miles east of Columbia, Missouri.

Registration will begin at 8:00 a.m. with opening comments at 8:30. The morning will include guided tours with stops that feature presentations of research results by university-trained scientists. Weed management research topics that will be discussed this year include the effects of soybean seed treatments on early season herbicide injury; Palmer amaranth and information related to the spread of this weed throughout the state; a variety of research results and topics pertaining to the management of resistant waterhemp and horseweed; the impact of different tillage systems on weed seed distribution in the soil; a comparison of herbicide programs for the effective termination of cover crops; the effects of common corn and soybean herbicide programs and their carryover on the successful establishment of fall planted cover crops; more research results and discussion pertaining to the new Enlist and Xtend (2,4-D and dicamba-resistant) soybean traits that will be introduced onto the market in 2016; and many other topics.



Registration for the field day will be \$10.00 to cover cost associated with lunch and refreshments.

To register call 573-884-7945 or send an e-mail to chismt@missouri.edu by Thursday, July 9th.

The Bradford Research and Extension Center is located at 4968 Rangeline Road, Columbia, MO 65201.

To learn more about the largest plant sciences' research farm in Missouri visit the Web site: Bradford.cafnr.org