



Ag Connection

Your local link to MU for ag extension and research information

<http://aqebb.missouri.edu/aqconnection>

For more information please contact your MU Extension Center:

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Breeding Soundness for Bulls

Bulls should undergo a full breeding soundness evaluation (BSE) each year thirty days before the breeding season begins to assess fertility and readiness to breed. Infertile bulls will result in more nonpregnant cows and a smaller calf crop, which will have a large impact on profitability. Despite this risk, the National Animal Health Monitoring System (NAHMS) Cow-Calf Survey found only about thirty percent of cow-calf operations perform BSEs before bull turnout.

A BSE is made of three parts:

Physical Exam

The physical exam evaluates structural soundness and physical characteristics necessary for mobility in the pasture. Bulls should be at a body condition score of 5-6 before breeding. This is especially crucial in younger bulls as they are more likely to lose condition while breeding activity is high. Feet and legs should be checked for signs of injury or lameness. Check the mouth and teeth of older bulls to make sure they can continue to eat and maintain condition in the pasture.

Reproductive Tract Exam

The entire reproductive tract should be examined for normal anatomy. Physical abnormalities, such as hair rings, penile warts and deformities can be discovered. The accessory sex organs should be palpated for swelling. Scrotal circumference should be measured and meet benchmarks set by age.

Minimum Scrotal Circumference by Age	
Age (months)	Size (cm)
<14	30
15-18	31
19-21	32
22-24	33
>24	34

Source: Chenoweth et al., 1992.

Semen Evaluation

Electroejaculation is used to collect a semen sample that is evaluated under a microscope. The sample is evaluated for motility, or movement, and morphology, or cell anatomy. Sperm motility is evaluated immediately as motility declines rapidly after a change in temperature or exposure to sunlight. At least thirty percent of sperm should move in a rapidly linear movement to pass. A stain is added to the sperm sample to assess morphology. Common defects include detached or misshapen heads and coiled or folded tails. At least seventy percent of cells should have normal anatomy.

After undergoing a BSE, a bull will receive an overall classification of Satisfactory, Unsatisfactory, or Deferred. A classification of Satisfactory means that the bull has passed all parts of the BSE and suggests that the bull should be able to perform as a breeding bull. Unsatisfactory bulls have failed one or more portions of the exam. A Deferred bull has failed a portion of the exam, but the problem may be fixed with

time or treatment. Deferred bulls should be rechecked at a later date before being turned out.

While a BSE will catch many potential problems before the breeding season, it does not mean that a bull will remain sound throughout the entire season. Bulls should be observed regularly throughout the season to ensure they are doing their job leading to fewer surprises at pregnancy examination.

Source: *Jenna Monnig, livestock specialist*



Tar Spot Disease in Corn

Tar spot is a fungal disease of corn which appeared in the United States in Illinois and Indiana in 2015. It was found in the northeast corner of Missouri in 2019, and is moving south and west each year. Currently, it is also confirmed in Iowa, Nebraska and Kentucky. Spots resembling tar, appear as raised, circular or elliptical spots (called stromata) on corn leaves, husks and stalks. A tan halo, also called a fish-eye lesion, may appear around the black spot. The lesion looks similar to insect frass (excrement) and other diseases like late season common or southern rust. When scratched with a fingernail, the spot does not come off of the leaf, whereas insect frass and rust pustules will. Tar spot stromata may appear on either side of the leaf, but they do not break through the leaf surface, so each individual lesion will only be on one side of the leaf.

Since tar spot in corn is a relatively new disease in the United States, little is known about how it spreads and effective control measures. The disease is thought to be spread by wind-blown spores and leaf material, and rain splash. Corn appears to be the only host plant for this strain of tar spot. A different strain infects maple trees. The fungi will overwinter in corn residue and infect subsequent corn crops. In fields with a history of tar spot, lesions first appear in the bottom of the canopy. In fields where it has not been found, lesions often appear in the upper canopy initially.

The disease may be found in corn fields as early as July, but usually does not appear until August. Conditions which are favorable for disease development include temperatures between 60- and 70-degrees Fahrenheit and humidity above 75 percent, along with overnight leaf wetness of at least seven hours from irrigation, fog or heavy dew. Yield losses of 25 to 30 percent have been reported when tar spot was prevalent in corn fields in other areas of the United States. Tar spot also reduces silage quality.

Dr. Kaitlynn Bissonnette, former MU Extension State Plant Pathologist, suggested these strategies for potentially reducing the impact of tar spot.

- ▶ Fungicide applications at tasseling (VT) through brown silk (R2) growth stages are most likely to be effective. Earlier applications will not likely control tar spot
- ▶ Irrigation management to avoid overnight leaf wetness of seven hours
- ▶ Selecting resistant hybrids as information becomes available
- ▶ Tillage to bury infected residue will speed the rate of residue decomposition, but will not completely eliminate the fungal spores
- ▶ Crop rotation, but it is unknown how long a field must be out of corn production in order to reduce the fungal pathogen

For more information visit the Crop Protection Network's website at:

<https://cropprotectionnetwork.org/>.

Maps of disease distribution can be found on the Corn ipmPIPE website at: <https://corn.ipmpipe.org/tarspot/>.

Source: *Valerie Tate, agronomy specialist*



Inflation and What it Means for Missouri Farmers

The profit forecast for U.S. agriculture is slated to rise 15.2% above last year's average of \$98 billion. However, this figure has not been adjusted for inflation. When adjusted in 2022 dollars, the real farm forecast for income is predicted to decrease by 7.2%. This is an actual reduction of \$9.7 billion dollars in net farm income.

With Missouri supporting a large agriculture base, impacts of inflation on prices related to production will be visible for year 2022. Regional and national expectations of farm cash receipts are slated to increase. However, lower subsidy payments and increased input costs are expected to offset these net increases in earnings. If other modifiers to production or harvest occur such as natural disasters, these farm receipts will take an additional devaluation.

The primary factors involved in agriculture production revenues involve the cost of inputs. Not only has the cost of seed, feed, fertilizer and chemicals increased, but fuel prices have also seen a continuous rise in price. The impacts of inputs have also been felt throughout the agriculture industry as a whole. Decisions related to production cost are beginning to influence the

upcoming planting season. Farmers are looking toward the upcoming planting season and facing decisions related to which crops to produce. A possible shift to crops requiring less nitrogen may occur due to fertilizer prices. If crops planted are significantly different from those intended, the supply and demand curve could be affected, impacting crop prices at harvest. Increased costs related to fuel and fertilizer impact livestock operations by placing pressure on hay and feed production. The cost of purchased feed products will also see an increase.*

Inflation played a major role in the downturn of agriculture and farm production at the beginning of the Farm Crisis four decades ago. Interest rates were increased to counter inflation rates, affecting borrowing power.

Although the farm financial climate is not to the level it was during the Farm Crisis, it is the closest it has been since. The good news is, farm land values are predicted to remain stable. Farmers need to be aware of risks and sound economic practices such as loan borrowing, reviewing budgets and understanding the return value of input costs.

*The current world state of affairs could further alter supply and price.

Source: *Jason C. Morris, ag business specialist*



Century Farms

Farms that have been in the same family prior to Dec. 31, 1922, are eligible for recognition as Missouri Century Farms.

To qualify, the same family must have owned the farm for 100 consecutive years. The line of ownership from the original settler or buyer may be through children, grandchildren, siblings, and nephews or nieces, including through marriage or adoption. The farm must be at least 40 acres of the original land acquisition and make a financial contribution to the overall farm income.

Details and the application are available at <https://extension.missouri.edu/programs/century-farms>

Another option to applying is to visit your county extension center and the office can help with the online application process. The application deadline is May 1, 2022. The application fee is \$140, which includes a customized sign somewhat like the picture.

For more information, call your county MU Extension center or go to <https://extension.missouri.edu/programs/century-farms>

MU Extension, MU College of Agriculture, Food and Natural Resources, and the Farm Bureau jointly sponsor the Missouri Century Farms program.





Gardening Tips for April

Ornamentals

- Fertilize established roses once new growth is 2 inches long. Use a balanced formulation. Begin spraying to control black spot disease.
- Shrubs and trees best planted or transplanted in spring, rather than fall, include butterfly bush, dogwood, rose of Sharon, black gum (*Nyssa*), vitex, red bud, magnolia, tulip poplar, birch, ginkgo, hawthorn and most oaks.
- Winter mulches should be removed from roses. Complete pruning promptly. Remove only dead wood from climbers at this time. Cultivate lightly, working in some compost or other organic matter.
- Easter lilies past blooming can be planted outdoors. Set the bulbs 2 to 3 inches deeper than they grew in the pot. Mulch well if frost occurs.
- Begin planting out summer bulbs such as caladiums, gladioli and acidanthera at 2 week intervals.

Vegetables

- Finish transplanting broccoli, Brussels sprouts, cabbage, and cauliflower plants into the garden. High phosphorous fertilizers help get transplants off to a quick start.
- Finish sowing seeds of all cool-season vegetables not yet planted.
- Asparagus and rhubarb harvests begin.
- Try an early sowing of warm-season crops such as green beans, summer squash, sweet corn, New Zealand spinach and cucumbers.
- Thin out crowded seedlings from early plantings of cool season crops such as beets, carrots, lettuce, onions and radish.
- Make succession sowings of cool-season crops.
- Begin planting lima beans, cucumbers, melons, okra and watermelons.

- Begin setting out transplants of tomatoes, eggplants, peppers and sweet potatoes.

Fruits

- Wooden clothespins make useful spreaders for training young fruits limbs. Place pins between the trunk and branch to force limbs outward at a 60 degree angle from the trunk.
- A white interior latex paint may be brushed on the trunks of newly planted fruit trees to prevent sunburn. This will gradually weather off in time.
- Stink bugs and tarnished plant bugs become active on peaches.
- Leaf rollers are active on apple trees. Control as needed.
- Remove tree wraps from fruit trees now.
- Protect bees and other pollinating insects. Do not spray insecticides on fruit trees that are blooming.

Resource: Missouri Botanical Garden

2022 Area Grazing Schools

Monroe County

Sept 8-10

Madison, MO

For details 660-327-4117 Ext 3

MU Hundley-Whaley Research Farm

June 21-23

Albany, MO

For details email: HumphreyJR@missouri.edu

Tri-County Grazing School

Aug 29-31

Owensville VFW Hall

604 W. Jefferson Ave

Owensville, MO

For details 573-897-3797

or e-mail leerw@missouri.edu