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Northeast Missouri
Ag Connection

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

Tall Fescue

Tall fescue is the predominant cool season grass in Missouri pastures and hayfields. Missouri sits on the northwest edge of the Fescue Belt, which stretches east to Virginia, south to South Carolina, west to Arkansas and back north to Missouri. It is adapted to a wide variety of fertility and moisture conditions, resilient when abused by overgrazing and trampling, and tolerant of many insects and diseases.

Tall fescue is very productive in the spring and autumn when temperatures are cool. It responds well to applications of nitrogen fertilizer, producing up to six tons of forage over the growing season. Tall fescue can provide high quality forage for winter grazing. The leaf's waxy cuticle protects it from freeze damage. When the stand is thick and undisturbed, the leaves will remain green well into the winter.

It sounds like a grazer's dream come true, but unfortunately, tall fescue may lead to nightmare invoking animal performance. One reason the forage is so resilient is the fungus it often harbors within the plant. The wild type endophyte fungus produces ergot alkaloids, which when consumed at high concentrations by livestock, results in fescue toxicosis. This toxin causes vasoconstriction (the constriction of blood vessels) leading to heat stress, rough hair coats, reduced milk production, poor conception rates, and poor weight gain. In severe cases, cattle can lose tail switches and hooves.

The endophyte is a fungus which grows between the cell walls of tall fescue plants. The infection is not contagious and does not spread from one plant to another; however, infected plants produce infected seed. Dr. Nick Hill, retired professor from University of Georgia, was the featured speaker at the April 15, 2021 MU Forage Livestock Virtual Town Hall. During the program he shared the results of a pasture survey which indicated 95 percent of tall fescue pastures were infected with the wild endophyte fungus at an infection rate of 60 percent or greater.

Knowing which fields are infected and the level of infection, can be valuable when making decisions about grazing versus hay harvest, whether to supplement grazing animals and which fields should be renovated. Plants can be tested to determine the level of infection in a pasture or hayfield. Testing can be done any time of year, but infection rates are highest between June and January in Missouri.

Novel endophyte varieties of tall fescue are available. The endophyte fungus in these varieties does not produce the toxins which reduce animal performance, but still provide some of the benefits to the plant such as insect and disease resistance.

Collect stems of tall fescue plants in 30 points throughout the field. Move through the field in a zig zag pattern to collect a representative sample. Cut the stem at the soil surface as the endophyte is concentrated in the lower portion of the stem. Clip the stem to a length of three inches from the bottom of the plant. Discard dead leaf

material and the upper portion of the stem. (See link below.)

Once results have been received, contact a MU Extension Field Specialist in Agronomy to discuss management options. For more information about endophyte testing, Dr. Hill's presentation can be viewed at: *https://www.youtube.com/watch?v=A7FhCoIxMQs*

Source: *Valerie Tate, agronomy specialist*

Youth Labor in Agriculture

During the summer months, some farmers consider hiring youth to provide supplementary labor. Both employers and employees should be aware of the labor standards pertaining to youth workers. There are both state and federal child labor laws which must be followed. The child labor laws were created to promote safety and health in the workplace and prohibit youth from working long hours, which could jeopardize development and education. The following information pertains to hiring non-family youth.

The state law in Missouri is called Missouri's Child Labor Law and applies to youth under 16 years of age. Agriculture youth workers must be at least 14 years of age. Child labor laws protect youth under the age of 16 from working too long, too late or too early. Maximum work hours for 14- and 15-year-olds differ depending upon the time of year. For the summer months (from June 1 to Labor Day), 40 hours per week is the maximum amount of time per week, 8 hours maximum per day and no more than 6 days per week. Summer work cannot begin before 7 a.m. and must end by 9 p.m. The rules change when school is in session. More details can be found on the Missouri Department of Labor & Industrial Relations website: *https://labor.mo.gov/youth-employment*.

The federal labor standards law is administered through the U.S. Department of Labor and has more details regarding child labor rules for ag employees. Once a person turns 16 years of age, he/she can do any job in agriculture. Youth 14- and 15-years of age can only do non-hazardous farm jobs. U.S. Department of Labor has a list of agricultural occupations considered hazardous for youth under age 16. A few of the common farm jobs listed include: operating tractors over 20 PTO horsepower, connecting or disconnecting implements to such a tractor, and operating grain combines, hay mowers, forage harvesters, feed grinders, and power post-hole diggers. A complete list can be found online at: *https://webapps.dol.gov/elaws/whd/flsa/docs/hazag.asp*.

Youth must be compensated for their work. Generally, minimum wage must be followed, although there are some exceptions. Wage details can be found on both the state and federal websites listed above.

Proper safety training and supervision is important. The National Children's Center for Rural and Agricultural Health and Safety estimates a child dies in an agriculture-related incident about every 3 days in the United States. In addition, 33 youth are injured in agriculture-related incidents daily.

Youth are an excellent source for labor during the summer months. Young people are eager to learn and ready to gain work experience. However, employers should be aware of the need for extra safety measures and training. The state and federal websites above have many details to help make hiring youth farm workers a positive and worthwhile experience for both the farmer and the youth.

Source: *Mary Sobba, ag business specialist*

Soybean Market: China's Involvement

Heading into the summer of 2021, and given the volatility of ag markets over the past several weeks, it is easy to see many market imbalances during the previous year; however, none weigh more than the financial burden related to disruptions in the food supply chain. As 2020 ended, soybean producers faced an emerging challenge from an extremely tight supply and demand ratio. In 2019, there was a total surplus of 909 million bushels of soybeans. The USDA states the final estimate of the 2020 soybean crop production was down 35 million bushels from the previous estimation of 4.135 billion total bushels.

According to weekly USDA reports last year, soybean export sales slowly rose to larger-than-expected levels. Cash prices for beans; however, were slow to rise and only matched the previous year's price in October, when it rose above $10.00 per bushel. Ag economists were not concerned as the USDA had reported an estimated 610 million soybean bushel surplus last August. China; however, was a major player in surplus purchasing at the end of the year. China has a major impact on American trade, not just agricultural products.

Free trade has been a boon to U.S. farmers and those involved in exporting U.S. farm products. Security in food production is an important part of agricultural production and affordable consumer food prices. This security comes in many forms. For example, currently there is increased concern that reduced soybean stocks have led to significantly higher livestock feed costs.

The Soviet Great Grain Robbery in 1972 was the last time of note that scarcity impacted food security at this level, when Russia purchased large quantities of American wheat at a relatively low price. While quietly doing so, this caused the market spot prices to increase from $1.45 per bushel during that summer to $5.00 per bushel in early fall of 1973. This was good for wheat producers, but had a major impact on costs to those in livestock production.

Currently, China has been doing the same, albeit with U.S. soybeans, and have been doing so quietly. China and other countries are able to silently impact U.S. agriculture markets due to the lack of published data.

The USDA gathers information from farmers and producers, as well as industry insiders. China and other similar countries either keep that information private, do not collect, or publish it; therefore, China in country grain supply is mostly unknown to outsiders, including the U.S. The lack of reliable information related to foreign stocks of agricultural products can impact local markets and prices. China's problems related to their own food insecurity can become a U.S. problem. The end result of the Great Grain Robbery was an increase in total food prices of 30 percent and the decimation of grain stockpiles. If not checked, there is a potential the U.S. could see that occurring again.

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

Gardening in June

Ornamentals

- Deadhead bulbs and spring flowering perennials as blossoms fade.
- Watch for bagworms feeding on many garden plants, but especially juniper and arborvitae.
- Thin seedlings to proper spacings before plants crowd each other.
- When night temperatures stay above 50 degrees, take houseplants outdoors for the summer.
- Apply a balanced rose fertilizer after the first show of blooms is past.
- Rhizomatous begonias are not just for shade. Many varieties, especially those with bronze foliage, do well in full sun if given plenty of water and a well-drained site.
- Most houseplants taken outside prefer a bright spot shaded from afternoon sun. Check soil moisture daily during hot weather.
- Apply organic mulches as the soil warms. These will conserve moisture, discourage weeds, and enrich the soil as they decay.
- Apply a second spray for borer control on hardwood trees.
- Continue spraying roses with a fungicide to prevent black spot disease.
- Trees and shrubs may still be fertilized by July 4th.
- Pruning of spring flowering trees and shrubs should be completed before the month's end.

Vegetables

- Repeat plantings of corn and beans to extend the harvest season.
- Plant pumpkins now to have Jack-o-lanterns for Halloween.
- As soon as cucumber and squash vines start to 'run,' begin spray treatments to control cucumber beetles and squash vine borers.
- Start seedlings of broccoli, cabbage and cauliflower. These will provide transplants for the fall garden.
- Stop harvesting asparagus when the spears become thin.
- To maximize top growth on asparagus, apply 2 pounds of 12-12-12 fertilizer per l00 sq. ft., water well and renew mulches to conserve moisture.

Fruits

- Oriental fruit moths emerge. They are most serious on peaches where the first generation attacks growing tips. Wilted shoots should be pruned out.
- Thinning overloaded fruit trees will result in larger and healthier fruits at harvest time. Thinned fruits should be a hands-width apart.
- Spray trunks of peach trees and other stone fruits for peach tree borers.
- Prune and train young fruit trees to eliminate poorly positioned branches and to establish proper crotch angles.

Miscellaneous

- Early in the month scout for bagworms. If found, treat while the caterpillars are still small and most vulnerable.
- Dethatch zoysia lawns as new growth begins to keep the lawn vigorous and reduce disease problems. Stop fertilizing cool-season grasses until fall.
- Prune spring-flowering shrubs immediately after flowers fade to avoid reducing flowering next year.

Source: Missouri Botanical Garden

2021 Area Grazing Schools

For information or registration on any of the schools, e-mail or call the contacts listed for each site.

Schuyler County
June 11-12
Valerie Tate tatev@missouri.edu
660.895.5123
Darla Campbell campbelld@missouri.edu
660.457.3469

Ralls County
August 26-28
Lucas Brass lucas.brass@usda.gov
573.985.8611
Robert Conley robert.conley@usda.gov
573.633.2211

Clark County
September 13-15
Jacky Martin Jacky.martin@swcd.mo.gov
660.727.2955
Brenda Schreck schreckb@missouri.edu
573.767.5273

Linn County
October 6-8
Valerie Tate tatev@missouri.edu
660-895-5123
Robert Conley robert.conley@usda.gov
573-633-2211

Osage County
September TBD
Osage SWCD 573-897-3797

For information about grazing schools in other areas of Missouri contact your local extension agronomist.

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Northeast Missouri Ag Connection

In This Issue:

University of Missouri, U.S. Department of Agriculture & Local University Extension Councils Cooperating

Mary Sobba

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