Too much rain this spring and summer has given Missouri farmers unprecedented challenges, say University of Missouri Extension agriculture specialists.

In many parts of the state, wet fields have delayed or prevented corn and soybean planting. Farmers are looking at the prospect of reduced yields, stunted growth, and pest, weed and disease problems. Fruit and vegetable producers, gardeners and homeowners face similar concerns.

An MU Extension task force has developed a website with information for farmers, ranchers, fruit and vegetable growers, gardeners, landowners and others affected by the wet weather. Topics include row crops, forages, cover crops, livestock impacts, horticulture, crop insurance, nutrient management, trees and turfgrass, and monitoring and control of pests, diseases and weeds.

To view the website which is updated as new information becomes available go to http://extension.missouri.edu/2015weather.

Contributors include MU Extension specialists in agronomy, livestock production, horticulture, forestry, agricultural economics, nutrient management, climatology and integrated pest management.
Missouri Grown at the Fair

AgriMissouri continues to grow the presence of Missouri made and grown products at the Missouri State Fair. After many years in the Agriculture Building, AgriMissouri is moving to a new space with a commercial kitchen and even more space for the store. The New AgriMissouri Bistro and Market will feature all Missouri grown and made products, both shelf ready and prepared. In addition to the store, the new Bistro will serve farm to table cuisine for breakfast, lunch and dinner. Not only does this provide more opportunities to serve fairgoers, it also creates more opportunities for AgriMissouri members and partners to participate in the fair. As much as we can showcase these products at the fair, no one can tell the story and importance of local food like you. We could definitely use your help, but most importantly, we would love to have people who work with Missouri Grown interacting with the customers as well.

Below is a list of opportunities to help out. In return for your shift, all volunteers will receive 2 admission tickets and a $20 credit in the AgriMissouri Bistro. Space will be limited in the kitchen so please let us know when you would like to attend. Shifts have been scheduled so you can bring your family or friends, work a half day and still have plenty of time to enjoy the fair. All locations for volunteering will be air conditioned.

8/10, 8/11, 8/12  1 shift from 10:00 am -3:00 pm
- Ag Building – help with horticulture contest and farmers’ market set-up (2 volunteers)
- Bistro – help with meat, ingredient and final restaurant set-up (2 volunteers)

8/13 through 8/23  2 shifts from 10:00 am – 3:00 pm and 3:00 pm – 8:00 pm
- Ag Building – help with sales and stocking in the farmers’ market (1 volunteer per shift)
- Bistro – help with serving, prepping and running food (3 volunteers per shift max)

If you would like to help, please email charlie.hopper@mda.mo.gov to be added to the schedule. Please leave a number you can be reached at both during the week and after hours so you can confirm everyone’s desired times. Directions to the bistro will be sent to you once we confirm and admission tickets will be made available at the gate.

Thanks for all of your support in this endeavor.

Charlie Hopper, AgriMissouri Coordinator, Missouri Department of Agriculture, Jefferson City, MO
Time to Prep Heifers for Fall Breeding

Whether you’ve raised your own replacement females or purchased heifers to expand a fall-calving herd, you probably used selection tools to choose those females. Maybe you kept the heifers out of your best-performing cows or you chose the heifers that were born early in the calving season. With the high cost of purchasing and/or raising replacement heifers, it is important that they are ready to enter the breeding season and that you have chosen the best breeding stock to enter your herd.

Heifers need to calve by 24 months of age to achieve maximum lifetime productivity. If heifers conceive late in the breeding season, it is likely they will not have enough time to rebreed in a defined breeding season. This is why it is important to make sure heifers are in proper nutritional, health, and reproductive status prior to their first breeding.

Target weights

Nutrition can have the greatest impact on when a female reaches puberty and also accounts for the greatest cost of raising replacements. A common practice when developing heifers is to have them at 65% of their mature weight at breeding and 85% of mature weight at calving. More recent research would suggest some operations may benefit from having heifers at a target weight of approximately 55% mature weight at breeding. You should carefully consider your cow herd and access to forage when selecting target breeding weights.

The diet after artificial insemination (AI) may be just as important as what is fed prior to breeding. If nutrition after the start of the breeding season is restricted, it can prevent ovulation. Studies show heifers gaining weight following AI have better 1st service conception rates than those that maintain body weight or lost body weight following AI.

Pre-breeding exams

Reproductive exams, known as pre-breeding exams, measure the development of the reproductive tract and the area of the pelvic opening. The data collected during these exams can be used to improve the breeding performance during the first breeding period and to minimize the incidence and severity of dystocia resulting in vigorous calves and successful rebreeding during subsequent breeding seasons.

Tract scores measure development of the female reproductive tract and are ranked on a scale of 1 to 5. Tract scores can identify females that have not attained puberty, and selection decisions to breed females can be made based on the tract scores.

Pelvic area, as determined by measuring the height and width of the pelvis, is another tool to identify heifers that may not be suitable for replacements. A small pelvic area can lead to calving difficulty and the loss of a calf, heifer, or both. A pelvic area of 150 cm² at the pre-breeding exam is recommended. Pre-breeding exams are encouraged 6 weeks before breeding.
Vaccine program

Maintaining herd health and protecting against disease related reproductive losses are important and cost effective steps to take when preparing for any breeding season. Many viral and bacterial diseases can cause abortions, early embryonic death, or calves born with defects. Other sickness causes stress in animals and can reduce conception rates. Heifers should be vaccinated against IBR, BVD, BRSV, PI3, Lepto, and Vibrio 30-60 days prior to breeding. A modified-live vaccine (MLV) is recommended when vaccinating for viral diseases because they provide quicker, better, and longer lasting protection than a killed vaccine. Another advantage of MLV is that one dose may provide protection whereas killed vaccines must be boostered. Remember to booster Lepto and Vibrio which can be done at breeding time. If you are using a 14-day CIDR synchronization protocol pre-breeding vaccines can be given at CIDR insertion. A proper vaccination schedule should continue through subsequent breeding seasons.

Erin Larimore, Livestock Specialist, University of Missouri, Jackson, MO.

Melon Report

Several fields in southeast Missouri have shown large brown to black leaf lesions that may be irregularly rounded on the leaf. The disease is favored by continuous wet conditions. In some cases this is showing up in very small, low lying areas of the field and in some cases it may be widespread. This may be Alternaria Leaf Spot.

Depending on the health of the vine, each plant may be able to hold back the disease with the aid of fungicides as labeled. A fungicide schedule should be maintained but is unnecessary within 2 weeks of the final harvest.

Once harvest is complete, destroy and plow under the current seasons crop residue. Allow the field to remain cucurbit free for 3 years.

According to the Cucurbit Downy Mildew Map (http://cdm.ipmpipe.org/scripts/map.php), Downy Mildew has made its way north to Wisconsin and Michigan meaning it is long past Southeast Missouri.

Keep an eye out for symptoms and maintain spray schedules as outlined in the Midwest Vegetable Production Guide https://www.btny.purdue.edu/Pubs/ID/ID-56/ if possible, to prevent disease introduction to the field.

Confirmation of a disease agent can only be done through lab testing. The University of Missouri lab form can be found at http://extension.missouri.edu/explorepdf/miscpubs/mp0604.pdf.

Sarah Denkler, Horticulture Specialist, University of Missouri Extension, Poplar Bluff, MO.
Crop Update

Corn – Diseases

Most corn is VT or later now. However, I have seen a few replants due to water or chemical damage. There is some gray leaf spot showing up on some of the later planted corn. Rust is down south so it is another potential disease. Identification of these diseases can be found in the following IPM guide: http://extension.missouri.edu/p/IPM1001. I have not received any specific reports of southern rust but scouting should continue.

Fungicide timing most beneficial to crop yield is VT to R2 (blister). Benefit from fungicides are unlikely once corn reaches 50% starch line. The question of whether to apply or not depends on variety susceptibility, field history, presence of leaf wetness for extended hours (generally more than 8 hours is required for spore germination), and inoculum of target diseases. Target diseases include gray leaf spot, northern corn blight and in some years rust may blow in from southern locations. The following link is from the Corn Disease Working Group for fungicide efficacy ratings which is also listed in the MO M171 manual and https://www.extension.purdue.edu/extmedia/BP/BP-160-W.pdf

Grain Sorghum - Insects

Earlier planted milo is entering growth stage 6 which is called half-bloom. As a general rule this timing is about 60 days after emergence. However, bloom will depend on maturity and growing degree day accumulation. Bloom on an individual head begins at the tip and moves downward over 5 to 10 days. By growth stage 6, 60% to 80% of the N, P, and K has been taken up.

Monitor fields for midge during flowering and corn earworm and webworm during seed development. Midge threshold is 1 adult midge per head at 50% bloom. The threshold for earworm is 2 larvae per head. Webworm threshold is 5 larvae per head. The Missouri Pest Management Guide - http://extension.missouri.edu/p/M171 has recommended products for these pests.


Grain Sorghum - Sugarcane Aphid

White sugarcane aphid (Melanaphis sacchari) has been found in Eastern Arkansas and Tennessee. View an ID guide slide set out of Texas: Sorghum Aphid - http://sorghumcheckoff.com/wp-content/uploads/2013/12/2014SorghumU_Robstown_MBrewerAphids.pdf. If white sugarcane aphids are found some preliminary thresholds are 50 to 100 aphids per leaf on 30% - 50% of plants. The two
products available are Sivanto and Transform (under Section 18 label).

**Soybean - Existing**

Pigweed management has been a bigger challenge in areas this year. I talked with some producers where the residuals are still holding very well. Some fields, pigweed have broken through the residuals and with the weather are rapidly growing. When talking pigweed, the time between “control” and failure with POST herbicides in many cases is 24 hours. This makes spraying small <3” tall pigweed necessary to achieve some level of control. Once pigweeds are >4” tall, herbicides may burn the tops out of the weeds but control is generally not achieved. Some research out of TN suggests that rescue treatment of pigweed involves two POST applications 7 days apart to achieve approximately 60% control.

Keep in mind rotation restrictions for PPO herbicides when spraying this late in the year. Another concern each year with more dependence on PPO herbicides is resistance. University of TN is beginning the process of evaluating a suspected Palmer amaranth biotype. If the pigweeds are scattered, the best option for seed reduction would be pulling the weeds.

**Soybeans – Late Planting**

Still receiving replant questions from extended flooding and the week of recent rain. Basically, soybean planting depends on when we will get a killing frost. Soybeans will produce seed if given at least 90 days to accumulate enough growing degree days to produce a pod. If planting late consider increasing seeding rate to compensate for shortened internodes. It is difficult to pin down an exact cutoff or a perfect maturity group for this late in the year. Ideally, beans emerging the last week of July would give you 3 months before we historically get a hard freeze. There is an interactive frost freeze probability guide at MU’s IPM website: [http://ipm.missouri.edu/](http://ipm.missouri.edu/)

The maturity group, if you have a choice, for SE MO are the indeterminate group 4 soybeans. Research conducted in Arkansas and Mississippi indicated that maturity group 4 soybeans provided highest yields when planted in late July. The planting date and maturity research can be found at the following link: [http://mssoy.org/wp-content/uploads/2014/07/MSSB-PLANTING-DATE-AND-MG-2014.pdf](http://mssoy.org/wp-content/uploads/2014/07/MSSB-PLANTING-DATE-AND-MG-2014.pdf). Dr. Wiebold wrote an article on ultra-late soybean planting: [http://ipm.missouri.edu/IPCM/2015/6/What-to-Expect-from-Ultra-Late-Planted-Soybean/](http://ipm.missouri.edu/IPCM/2015/6/What-to-Expect-from-Ultra-Late-Planted-Soybean/)

Replant decisions for soybeans can be aided by the MU guide, “Corn and Soybean Replant Decisions.”

**Soybeans - Insect/Disease**

Some soybeans are entering R3/R4 maturity. Mississippi State has a guide on staging soybean maturity (attached PDF file). Fungicide timing is between R3 and R5. Seeing some stink bugs, particularly in gardens right now. Continue to monitor soybeans for pod feeders. Threshold for stinkbug is 9 per 25 sweeps or 1 per foot of row. More information in the MU guide 7151: “Stink Bugs”

**Storing Seed**

I had a question about storing seed in a prevent plant situation. Storing seed is generally not recommended due to loss in vigor and potential germination. Soybeans must ideally be stored at a constant cool temperature (51+/- 1 F) and humidity (60% +/- 7) in order to help maintain some seed quality. If you keep seed it is recommended to have both a vigor and germination test.

Anthony Ohmes of Jackson Missouri and David Reinbott of Benton, MO Agronomy Specialist, University of Missouri Extension
Soil Moisture Sensors

Farm Tour for Landlords Wednesday, August 12, 2015. 5pm-7pm

This event is for landlords of irrigated land only and will be held at the Glenn Restaurant south of Charleston, MO. Dinner will be provided and a presentation on the economics of farmers/landlords using wireless soil moisture sensors to schedule irrigation. The presentation will talk about expected yield increases, suggestions on sharing of costs between farmer/landlord, and the 2016 EQIP program.

After dinner a trip is planned to a farm 9 miles away that is using various types of sensors. Dealers will be available to talk to at the dinner and on the farm trip. Participants on the trip will not have to leave their car.

Cost is $10 each, seating is limited, and pre-registration is required. E-mail henggelerj@missouri.edu to be sent a secure link to preregister.

Wireless Soil Moisture Sensor Conference & Tradeshow Tuesday, August 11, 2015. 8am-4pm

This conference and tradeshow is specifically dedicated to the use of soil moisture sensors and will feature some of the country’s top experts on the subject. The tradeshow will also be host to a number of the top manufacturers of wireless soil moisture sensors.

A keynote presentation will be Gary Zoubeck of the University of Nebraska. NE is the largest user of sensors in the country with nearly 1 in 4 farms using this technology. Dr. Zoubeck will explain why there is such a large buy-in by farmers on the technology and what it has meant in terms of increased yield and lower pumping costs.

The EQIP program will allow cost share on sensors in 2016. Robyn Sitzes with the NRCS will explain about the program and how farmers can sign-up.

Lunch will be provided by Tasteful Creations Catering with Chef Karon Campbell. Cost is $25 if pre-registered or $30 at the door. E-mail henggelerj@missouri.edu to be sent a secure link to preregister.
Missouri Ag News is a publication of University of Missouri Extension Specialists in the Southeast Region of Missouri. Contributions to this publication are made by:

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**Future Meetings & Events -**

**Lifestock First Aid and Safety, Friday, July 31, 2015.** 2:00 pm ET. Free live webinar will focus on basic first aid techniques for use with livestock and working animals. To register go to https://learn.extension.org/events/1976#.Vbj29XnbKUn. To log on go to https://connect.extension.iastate.edu/eden.

**Wireless Soil Moisture Sensor Conference & Tradeshow - Tuesday, August 11, 2015.** 8:00 AM to 4:00 PM. [http://www.eventbrite.com/e/wireless-soil-moisture-sensor-conference-tradeshow-tickets-17922795564](http://www.eventbrite.com/e/wireless-soil-moisture-sensor-conference-tradeshow-tickets-17922795564) Lunch will be provided. Cost is $25 if pre-registered or $30 at the door.

**Soil Moisture Sensor Farm Tour for Landlords - Wednesday, August 12, 2015.** 5:00 PM to 7:00 PM. [http://www.eventbrite.com/e/landlords-farm-visit-dine-view-wireless-soil-moisture-exhibits-tickets-17836538567](http://www.eventbrite.com/e/landlords-farm-visit-dine-view-wireless-soil-moisture-exhibits-tickets-17836538567) Cost is $10 each, seating is limited, and pre-registration is required.

**Missouri State Fair - August 13-23, 2015.** Sedalia, MO. For more information visit www.mostatefair.com or call 1-800-422-FAIR.

**Fisher Delta Research Center Field Day - September 2, 2015** Portageville, MO.

**Grain Engulfment Rescue Trailer display - September 15-17, 2015** SEMO District Fair in Cape Girardeau, MO

**Commodities and markets** - [http://extension.missouri.edu/scott/crop-budgets.aspx](http://extension.missouri.edu/scott/crop-budgets.aspx)  
**Farm Bill** - [http://extension.missouri.edu/scott/Farm-bill.aspx](http://extension.missouri.edu/scott/Farm-bill.aspx)

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