

Missouri Ag News

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Watermelon Disease

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Engineering	Livestock
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Bacterial diseases such as spot and fruit blotch in watermelon can cause devastation quickly and should be handled pre-emptively.

The first line of defense is to inspect transplants before planting keeping an eye out for lesions that may prevent the introduction of infection into the field. This is especially true with fruit blotch, a disease associated with seed infection. If bacterial disease is detected in small numbers remove those infected plants to remove any contamination to other sources.

Bacteria will spread from one source to another as overhead irrigation hits lesions and bounces to other vines. It may also be spread via machines or through wind-driven rain.

Other control measures involve a program that removes the striped and spotted cucumber beetle from plantings. Systemic insecticides, such as Admire PRO or Platinum, are applied pre-plant, during planting or as a drench after planting. If beetles appear after the systemic loses effectiveness in 2 or 3 weeks then apply contact insecticides to control the population.

Applying copper products at 10-14 day intervals once the disease is diagnosed may protect against further spread of the disease. This strategy is used as a suppression and not as a control of the bacterial infection. Results are usually based

on how quickly the disease is diagnosed and how much infection already exists in the field.

The environment just after planting was conducive to the spread of these bacterial diseases in Southeast Missouri. Cucumber beetles were present. Careful scouting should help to detect these diseases early and perhaps provide time to suppress future outbreak.

Bacterial Leaf Spot (*Pseudomonas* spp.) also may appear water soaked but appear in any location on the leaf.



Over time these lesions will produce concentric rings as the lesion enlarges.

Bacterial Fruit Blotch (*Acidovorax avenae* subsp. *Citrulli*) lesions appear on leaves near veins. These lesions are dark and oily or water soaked verses looking dried out. Dark areas will appear on fruit and rapidly expand.

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

MU Plant Diagnostic Clinic reopens

The University of Missouri's Plant Diagnostic Clinic has reopened with a Missouri native at its helm. It had been closed for two years.

Extension associate and plant pathologist Patricia Wallace offers answers about plant pests for homeowners, farmers, gardeners and businesses across the state. MU Extension specialists in county offices frequently send in samples from residents in their region.

Since the clinic reopened April 1, there's never been a lack of variety of sick plants, Wallace said. Samples have ranged from field, greenhouse or high tunnel crops to ornamental shrubs and trees.

Besides addressing plant diseases, the clinic can identify weeds, mushrooms, insects and arachnids with research-based results and an integrated pest management philosophy. Plant Sciences faculty specializing in agronomy, entomology, horticulture, weed science and plant pathology support the clinic, which opened in 1965. It is the only public plant pathology laboratory in Missouri.

Clinic results are logged into the National Plant Diagnostic Network's National Repository, a

system that helps track the occurrence and spread of plant pests.

As a child, Wallace spent a lot of time at her grandparents' farm near Ava, Missouri, so she understands the importance of plants and the part they play in Missouri's economy. She became interested in both botany and microbiology in college at Drury University in Springfield. She received her master's degree in plant pathology at Oregon State University and then worked for a California strawberry breeding company before returning to Missouri with her family.

The clinic is part of the Division of Plant Sciences in the College of Agriculture, Food and Natural Resources, which also operates a soil testing lab and plant nematology lab on the MU campus.

For more information about the clinic, go to plantclinic.missouri.edu or email plantclinic@missouri.edu.

Samples can be mailed to University of Missouri Plant Diagnostic Clinic, 28 Mumford Hall, Columbia, MO 65201 or brought to your local extension center for mailing.



Patti Wallace examines a wheat sample at the MU Plant Diagnostic Clinic. Photo by Linda Geist .

Free Climate Data

Farmers have a new set of free tools to help them make crop decisions. The websites are important because access to historical climate data helps farm operations that depend on favorable temperatures and precipitation patterns, Massey says. To explore several weather data links go to <http://extension.missouri.edu/news/DisplayStory.aspx?N=2084>.

Rice Water Weevil Management

Very soon it will be time for rice to go to flood and that means it is time to start thinking about rice water weevil. Overall, the majority of the crop is behind because of all of the rain and cool weather we have had over the last several



weeks. In general, the early rice has endured a lot of rainfall and adverse conditions.

The environmental conditions through March and April, especially the heavy rain between planting and now, were not ideal for performance of insecticide seed treatments. Mississippi State University graduate student, Mr. Andrew Adams, research looking at the time from planting to flood and flushes on the performance of seed treatments. He delayed the flood out to 8 weeks after planting and showed that it did not negatively impact rice water weevil control.

Rice Water Weevil Adult Feeding

Basically what his research showed was that the seed treatments did not perform as well when he flushed the field 2 times as they did when he did not flush the field or when he flushed the field 1 time. This was reflected in both weevil numbers and yields. Although

In contrast, flushing the field at least 2 times reduced rice water weevil

flushing is not the same as rain, this does provide an indication that the seed treatments may not perform as well as we would like them to.

The bottom line is that it will be important to scout fields closely for feeding by adult weevils, especially in fields that have experienced a lot of rainfall. If excessive adult feeding is observed, a supplemental foliar insecticide may be warranted, even where a seed treatment was used. In fields where a seed treatment was used, a pyrethroid will likely be the most economical option. In fields where no insecticide seed treatment was used, a pyrethroid should do a good job if timed properly.

In some situations on untreated rice, The chemical Belay may be a better option. We have looked at Belay for the last two years and found that timing is less important than with pyrethroids. We presume that this is the case because clothianidin, the active ingredient in Belay, is systemic. MSU research showed that it provided similar control to the pyrethroids, but was much more consistent in terms of control and yield protection on rice that did not have a seed treatment at planting.

Our results over the last several years have shown that yield losses are directly correlated with rice water weevil larval numbers. Regardless of whether a seed treatment was used or not, it is important to maximize rice water weevil control as fields are flooded to prevent yield losses.

Sam Atwell, Agronomy Specialist, University of Missouri, New Madrid, MO.

Armyworm, Corn and Soybean

Armyworm:

Reports of armyworm have been coming in from various areas of the region. Continue to scout wheat and fescue fields. Armyworms are grass feeders, so they can also move to newly emerged corn and grain sorghum. Scouting in the late afternoon or early morning will help



True armyworm caterpillar, *Pseudaletia unipuncta* - photo courtesy University of Missouri IPM

since armyworms are primarily nocturnal feeders. The armyworm caterpillar can be identified by the orange and white striping on the sides and the black dots on each of the four abdominal prolegs. Threshold numbers for armyworm in hay, pasture, and wheat are 4 larvae per square foot. Corn is when damage reaches 25%. For more information on true armyworm and the armyworm complex of pest in Missouri download the following guide: www.extension.missouri.edu/p/G7115. For product information consult the Pest Management Guide:

www.extension.missouri.edu/p/M171.

Yellow and Purple Corn:

Cool, rainy weather will slow root growth and deplete oxygen in soil. Wet soil corresponds to yellow corn due to reduced oxygen. If corn does not recover there could be soil nitrogen loss. If there is concern of nitrate loss, consider a nitrate test in the top 12 to 24 inches of soil or consider increasing your sidedress rate to compensate for loss. Cool soil can correspond to purple corn due to phosphorus not being mobile and root growth slowed. As soil dries continue to scout fields for regrowth. For nitrate testing refer to: www.extension.missouri.edu/p/g9177.

Soybeans:

As soybeans emerge begin monitoring for bean leaf beetles. Threshold for beetles is 5 per foot of row on seedling soybeans. Refer to MU guide for more information:

www.extension.missouri.edu/p/g7150.

Anthony Ohmes, Agronomy Specialist, University of Missouri, Cape Girardeau, MO.



Bean leaf beetle adults. Note the characteristic black triangle at the base of the forewings. - photo courtesy Ohio State University

Crop Water Use Program for Irrigation

University of Missouri researchers are currently working to bring online a new crop water use program for irrigation. The online irrigation program was developed to help farmers produce higher yields by improving irrigation management.

The program utilized a soil water balance equation that balances the amount of water that is lost from the plant system



by evapotranspiration (ET) and the amount of water that is added to the system by rainfall and irrigation. The ET is computed each day from solar radiation, temperature, humidity and wind data obtained from the network of weather stations located across Missouri.

Information needed for program is field location using GPS coordinates, dominant soil type and crop in field. The program makes use of both national weather service rainfall data or could

be adjusted to use field rainfall measured using an infield rain gauge.

The program provides daily dryness index warning when the soil water deficit is close to the management allowed depletion (MAD) level of field. Dryness index warning will occur when soil moisture falls within 70 to 100 % of MAD. This approach provides producers with ample time to irrigate before reaching 100% of MAD. Once a field soil becomes dry, crop yield is lost. And it is difficult to rewet the soil profile with irrigation.

Producers who are interested in using the online irrigation program in their production practice should contact AJ Foster by email (fosteraj@missouri.edu) or fax 573-568-2261 at the Stoddard County Extension office in Bloomfield. Send your name, phone number, email address, preferred user name and password.

AJ Foster, Agronomy Specialist, University of Missouri, Bloomfield, MO

Update National Farmers Market Directory

The U.S. Department of Agriculture's Agricultural Marketing Service (AMS) is launching its annual updating process for the USDA National Farmers Market Directory. The Directory is voluntary and relies on self-reported input from farmers market managers, representatives from state farmers market organizations, and other key market personnel. The Directory is one of the most comprehensive and up-to-date sources of information about farmers markets nation-wide. Market listings can be added and updated by going to www.usdadirectoryupdate.com.

USDA Releases Beekeeper Survey

An Agriculture Department annual survey of beekeepers, released today, shows fewer colony losses occurred in the United States over the winter of 2013-14 than in recent years. Beekeepers say losses remain higher than the level they consider sustainable, and USDA announced plans to hold a conference this fall on pollinator health.

According to survey results (<http://beeinformed.org/2014/05/colony-loss-2013-2014/>), total losses of managed honey bee colonies from all causes were 23.2% nationwide. That number is above the 18.9% level of loss that beekeepers say is acceptable for their economic sustainability, but is a marked improvement over the 30.5% loss reported for the winter of 2012-2013, and over the eight-year average loss of 29.6%.

More than three-fourths of the world's flowering plants rely on pollinators such as bees to reproduce, meaning pollinators help produce one out of every three bites of food Americans eat, USDA said.

"Pollinators, such as bees, birds and other insects are essential partners for farmers and ranchers and help produce much of our food supply. Healthy pollinator populations are critical to the continued economic well-being of agricultural producers," said Agriculture Secretary Tom Vilsack. "While we're glad to see improvement this year, losses are still too high and there is still much more work to be done to stabilize bee populations."

There is no way to tell why the bees did better this year, according to experts cited by USDA. "Yearly fluctuations in the rate of losses like these only demonstrate how complicated the whole issue of honey bee health has become, with factors such as viruses and other pathogens, parasites like varroa mites, problems of nutrition from lack of diversity in pollen sources, and even sublethal effects of pesticides combining to weaken and kill bee colonies," said Jeff Pettis, co-author of the survey and research leader of the Agricultural Research Service Bee Research Laboratory in Beltsville, MD.

The winter losses survey covers the period from October 2013 through April 2014. About 7,200

beekeepers responded to the voluntary survey. A complete analysis of the bee survey data will be published later this year.

USDA said it will hold a summit aimed at addressing the nutrition and forage needs of pollinators in Washington, D.C., on October 20-21, with a consortium of public, private, and nongovernmental organizations in attendance. Attendees will discuss the most recent research related to pollinator loss and work to identify solutions.

In 2010 the USDA set up the People's Garden Apiary which now has a "bee cam" at the headquarters as an additional effort to increase public awareness about the reduction of bee populations, and to inform Americans about actions they can take to support the recovery of pollinator populations. The USDA "Bee Watch" website (<http://www.usda.gov/wps/portal/usda/usdahome?navid=usdabees>) will broadcast continuous honey bee hive activity live over the Internet. The bees are Italian queens, the most common bee stock and the same used in many honey bee colonies throughout the United States.

Vilsack noted he has created a Pollinator Working Group, under the leadership of Deputy Secretary Krysta Harden, to better coordinate efforts, leverage resources, and increase focus on pollinator issues across USDA agencies.

Earlier this year, USDA made \$3 million available to help agriculture producers in North Dakota, South Dakota, Minnesota, Wisconsin, and Michigan provide floral forage habitats to benefit pollinating species on working lands.

The honey bee pollinator effort is intended to encourage farmers and ranchers to grow alfalfa, clover and other flowering habitat for bees and other pollinators. The president's fiscal year 2015 budget proposal provides \$71 million for pollinator health activities through multiple USDA agencies.

Crop Life America said today in a news release that it was "encouraged" by the report, but said USDA's National Agricultural Statistics Service (NASS) would "enhance the rigor and value of the information and aid in the important work of improving bee health."

Stoddard County
Soil and Water District



PASTURE AND GRAZING MANAGEMENT SHORT COURSE



**USDA Building, 18450 Ridgeview Lane,
Dexter, MO 63841**

Thursday Evenings, Sept 4-25, 2014
6:30 pm-8:00pm



Sept 4: Pasture soil and nutrient management

Session will equip participants with fundamental knowledge of soil chemical, physical and biological properties and how management can maximize fertilize use efficiency. – Dr. AJ Foster.

Sept 11: Pasture species selection and establishment

Session will equip participants with an understanding of selecting and matching suitable species with land resource and the best practices to improve stand establishment. –Dr. Anthony Ohmes.

Sept 18: Pasture renovation, weed control and new innovations in pasture management

Session will expose participants to several management approaches for pasture renovation, practices for controlling weeds and new innovative technologies currently used for improving pasture productivity. –Dr. Anthony Ohmes.

Sept 25: Grazing management strategies

This session will put it all together and explore the concept of animal/pasture interaction. – NRCS Grazing Specialist.



**Prior registration is required by
Monday, August 25, 2014**

Educational materials and light refreshments will be
provided each night.



Pasture and Grazing Management Short Course Registration Form

Name (s): _____

Address: _____

Phone: _____ Email: _____

Please circle dates attending:

Entire Course

Sept 4: Pasture soil and nutrient management

Sept 11: Pasture species selection and establishment

Sept 18: Pasture renovation, weed control and innovations

Sept 25: Grazing management strategies

Course Fee: \$10 per night or \$35 for the entire course

Please include check payable to MU Extension Stoddard County along with your registration form by Monday, August 25, 2014.

Registration: Call 573-568-3344, Mail registration form to MU Extension Stoddard County, 316 S. Prairie, P.O. Box 169, Bloomfield, MO 63825, or fax to 573-568-2261.

Please check: I am attending the course because: I graze horses I graze cattle I graze sheep/goats I graze other livestock
 I am new to pasture management and would like to learn more

1.0 CEU credit for each session

If you have special needs that need accommodated, please contact the office two weeks in advance.

Equal Opportunity/ADA Institution



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Future Meetings & Events -

Valuing Manure and the Environment July 8-9 2014. Ozark Empire Fairgrounds in Springfield, MO. Register at <http://www.agannex.com/manure-manager/manure-expo/registration>.

Missouri Young Farm/Young Farm Wives Tour July 31-August 2, 2014. Dexter High School, Dexter, MO. Contact Gary Wyman for more information gwyman@dexter.k12.mo.us.

Pasture and Grazing Management Short Course Thursday evenings in September 2014. USDA Building in Dexter, MO. Register by August 15 at the Stoddard County Extension Center. 573-568-2261.

Commodities and markets - <http://extension.missouri.edu/scott/crop-budgets.aspx>

2014 Farm Bill - <http://extension.missouri.edu/scott/Farm-bill.aspx>