Missouri Ag News

A Publication of University of Missouri Extension - Southeast Region

Volume 4, Issue 3 March 1, 2014

Late Winter Aphids in Wheat

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Engineering	Livestock
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With cold temperatures as green up begins in wheat, scouting for aphids is a challenge because they are very close to the ground. This season due to the late, wet fall and cold winter, aphid colonization may be off to a slow or non-existent start. Scouting is the best way to determine which fields need a pyrethroid application to help reduce aphid build up and spread of spring barley yellow dwarf virus (BYDV). When scouting, stop in a number of locations in the field and carry a small trowel in order to dig up individual crowns to check up close for aphids. Even with low numbers, research in Mississippi and Tennessee has shown consistent yield improvement with late winter pyrethroid applications. One suspected reason is removing the initial population of aphids before they have a chance to increase in mid to late March and possibly reducing the infection potential of BYDV. Scout now throughout the field before aphid populations exceed 6 per foot of row. More information on the research from Mississippi State and Tennessee are at the following links:

http://www.mississippi-crops.com/2014/02/12/late-winter-pyrethroid-applications-in-wheat-for-aphid-control/

http://news.utcrops.com/2014/01/spraying-aphids-in-wheat-the-next-several-weeks/

Photo Courtesy of Dr. Scott Akin, University of Arkansas

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

Nitrogen… Gassing Up for a Bumper Crop…

Nitrogen (N) for plants is like gas for your truck. If you drive from Bloomfield, MO to Los Angeles, CA more than likely you will need to stop and fill up with gas several times. On the other hand, if you drive from Bloomfield to Dexter it is unlikely you will stop for gas. The need for gas depends on how much you started with in the tank and the distance to be traveled.

Similarly, the amount of additional N required by a plant to reach its productive maximum is dependent on the amount of N available to the plant throughout the growing period.

If you are like me, when planning a long trip i.e. trip to LA, you will start out with a full tank leaving home. A full tank is a good start, as it allows you to go further before needing to refill. Similarly, there is a need to apply some amount of N at planting to give the plants a good start. Based on this idea, one may say, why not just apply the entire N amount that the plant requires at the beginning of the season. If we think about it, this would be like trying to fill your tank with all the fuel needed for the entire trip to LA at once. The tank will overflow and gas will be lost. Applying excess N will not result in as much waste, but some N will be lost and the remaining excess will cause unwanted vegetative growth, promote disease or contribute to pollution of surface and ground water.

Research studies have shown better results with split applications of N with the majority applied pre-planted. For example, a split application in rice of 50-65% of total N applied pre-flood and the remainder at midseason has shown the highest N use efficiency. It is important for plants to have enough N available early in the season to develop reasonable size plants that are capable of making use of sunlight to manufacture food and develop seed.

The fuel gauge in our truck uses various indicators to let us know we are getting low, it beeps, little lights come on, getting brighter as you get closer to empty. If we ignore all these signs, we run out of gas and the truck stops. Likewise, if you know what to look for we can also tell when plants are running out of N. The signs that a plant is low on N are:

- Poor or slow growth
- Light green color
- Yellowing of the oldest leaves, beginning at the tip and proceeding along the midrib toward the base or stalk

The first two signs are difficult to recognize and are best noticed when deficient plants are grown nearby healthy plants for comparison. Oklahoma State University developed and utilized the N rich strip approach that allows for comparison of healthy N sufficient plants with other plants in the field for determining midseason N application (http://www.nue.okstate.edu/Index_Publications/Nstrip%20brochure.pdf). This approach is very useful for managing N because unlike a fuel tank for your truck, it is not easy to identify how much available N is in the soil when the plant starts growth or after it has grown for some time.

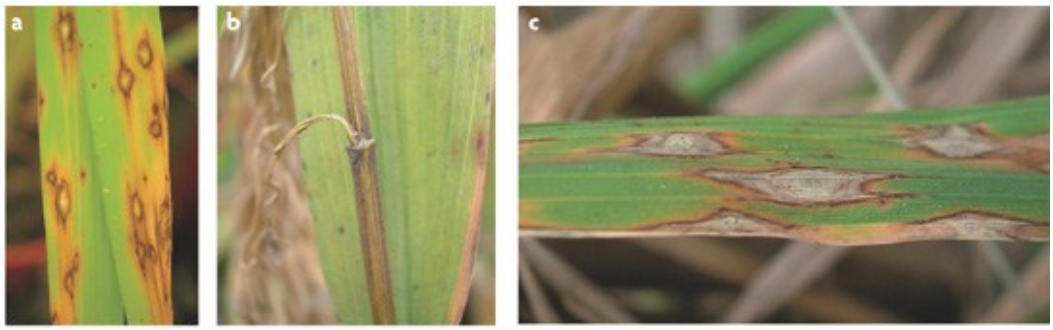
A.J. Foster, Agronomy Specialist, University of Missouri, Bloomfield, MO.

Insect & Weed Recommendations for Rice

At our annual Missouri Rice Producers Conference last week we had topics on weeds, diseases, insects, fertility and marketing. Our producers are telling us that Missouri rice acres will be up in 2014. And they are focusing on a good early start for the 2014 season. Their attention is on selection of varieties, early control of resistant and other weeds along with early insect and disease control in rice.

For early insect control we are following the insecticide and fungicide seed treatment recommendations of Dr. Gus Lorenz with the University of Arkansas. Due to the low seeding rates and cost of seed it's very important to control seedling diseases and insects. And, the best way to get seedlings off to a healthy start is seed treatments that are matched to your insect and disease situation.

We confirmed the value of flushing early and often in dry springs for herbicide activation which resulted in good early weed control. During dry periods we are forced to flush early and often for rice seed germination. With conventional and Clearfield, we recommend starting clean with tillage or a burndown, followed with a pre/delayed, early post herbicide program. We estimate that MO growers plant about fifty percent Clearfield technology. We suggest matching these technologies and mode of action to your specific weed problems. And, we must pay attention and plan now for not only what your neighbor is planting in the field next to yours but to all applicators in the area, throughout the season. My work on drift and misapplications shows me how complicated it is so, that's why I'm emphasizing to carefully and fully plan now. Also, it's a good idea to mark your fields with the standard color coded flags for conventional, Clearfield, Glyphosate and Liberty Link technology.



A - Rice blast affects seedlings. **B -** In the field, neck and panicle blast are a major cause of rice yield loss. **C -** Large rice blast lesions. - Richard A. Wilson & Nicholas J. Talbot. *Nature Reviews Microbiology* ***7****, 185-195 (March 2009*).

Missouri producers ended the 2013 season with a good yielding rice crop. The quality was good and our pumping cost was low. But, 2014 is another year and they know it will not be like the past two. So, we suggest they identify their specific problems for each field, study their options for solutions and build a plan to match the technology to get positive results. We recommend a consultant to help you, along with your retailer and the University of Missouri. I know it's not simple. That's why God made a farmer.

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

Spring Burn down: Targeting Marestail

Weed control of winter annuals should be on the mind of producers as we move into March. The minimum temperature range for control of winter annuals including marestail (horseweed) and annual ryegrass is 50° F.

Herbicide rate can compensate some at lower temps but 40° F should be the lower cutoff. Application timing for maximum potential control is when marestail is in the rosette stage of growth. When marestail bolt (stem elongation) control will be reduced. Allow enough time between burndown and planting to insure crop safety and to evaluate control. Avoid planting into emerged marestail, especially with soybeans since in season control is very limited.

Targeting marestail this spring the products that provide good POST control are programs containing growth regulating herbicides, dicamba, or 2,4-D or a package mix of the two as the base plus glyphosate. Another product that can provide marestail control is suflufenacil (Sharpen/Verdict). Other contact burndown tankmix choices include paraquat (Gramoxone) or glufosinate (Liberty – if you are NOT planting Liberty Link soybeans).

Residual herbicides containing ALS mode of action (Group 2) can provide residual control of ALS-sensitive populations. Herbicides containing residual activity including growth regulating herbicides have plant back restrictions that must be followed or crop injury will occur. Read and follow all label instructions.

Two links that I recommend you read for specific management of marestail are Take Action publication “Management of Herbicide Resistant Horseweed (Marestail) in soybeans and Arkansas-crops article “Winter annual burndown. Will the weather cooperate?” Both can be found at their respective links: http://weedscience.missouri.edu/extension/extension.cfm

http://www.arkansas-crops.com/2014/02/07/burndown-weather-cooperate/

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

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. He and Guinan recently presented the information at MU’s Crop Management Conference in Columbia. To explore several weather data links go to http://extension.missouri.edu/news/DisplayStory.aspx?N=2084.

Beekeeping Workshop

Thursday, March 27, 2014 Poplar Bluff, MO

5:00 p.m. to 8:00 p.m.

This workshop will give basic knowledge of beekeeping practices. Topics include:

Life Cycle

Colony Collapse

Pest Control for Plants

Starting a Colony

Please register by March 24, 2014. Call the Butler County Extension Center at 573-686-8064.

For Sale: Carla Springer of Five Oaks Farms has market tables for sell that would be of great use to any produce vendors. They are on wheels and independent of each other or can be used together. They also have adjustable tops. They are asking $100 each. If you are looking at making a SPLASH this market season, these tables would do it!

Soil Health Workshop: The Keys to Soil Health

Tuesday, March 25, 2014 The Clinton Community Center Sikeston, MO

Wednesday, March 26, 2014 Eagles Lodge in Kennett, MO

9:00 a.m. to 4:00 p.m.

This workshop will give basic knowledge of how soil works and how management practices affect the soil. Topics include:

- Soil biology demystified - learn how microbial life is needed for crop nutrient uptake
- Dynamic properties of soil translated - managing for soil structure can help crops withstand drought
- Cover crops rationalized - a great tool for improving soil health but just one part of the whole picture
- Management techniques analyzed - learn how to protect the greatest resource on your farm

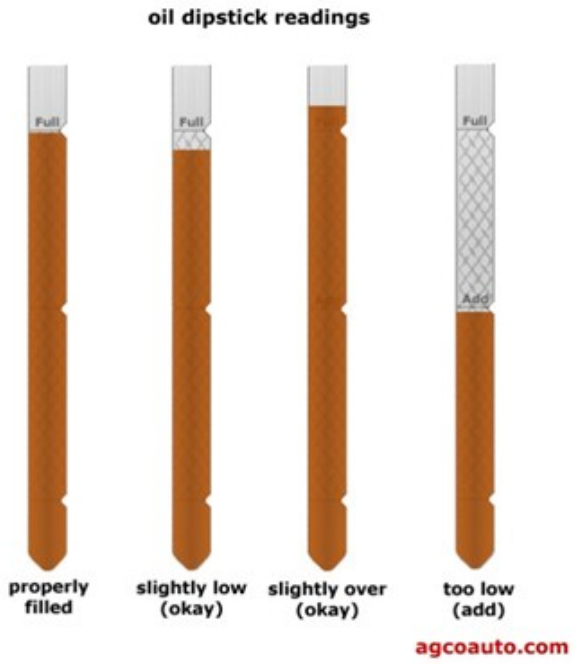
$10 Registration for lunch by March 12, 2014. Call Jill Staples at 573-239-2179

P and K are like Oil for your truck……

Management of phosphorus (P) and potassium (K) is similar to managing oil for your truck. It doesn't matter if you are driving from Bloomfield to Los Angeles or from Bloomfield to Dexter; if you are low on oil then some needs to be added to bring the level up to full before you can get the best performance from your truck. If not, the engine can become damaged.

If the oil level is full, then the oil is good for both trips. Like oil for the engine of your truck, P and K needs for the growing season are not dependent on how much to be grown, but on whether the amount of P and K in the soil is adequate.

A calibrated soil test is needed to determine if the soil has an adequate amount of P and K for plant growth. The use of a soil test is similar to



the use of your dip stick to check the oil level. When the dip stick is removed it shows the oil level in the engine compared to where the oil

level should be. If it is not full you will have some idea on how much to be added. Lets say it is slightly low, below the full mark. In this case you will be okay and probably will do nothing. If you find yourself at a service station getting gas, you might just add enough oil to get you back to the full mark.

University of Missouri soil test is calibrated to identify the need for P and K in soil based on the crop grown. *See guide sheet G9112, for information on understanding the Missouri Soil Test Report.*

Adding a full quart of oil when you only need ½ can damage your engine. Although you can add excess P and K without hurting the soil or plant it does cost money to do so. To prevent pollution to local streams or ponds caused from surface runoff and erosion carrying nutrients off site, excess application of P and K should be avoided.

A.J. Foster, Agronomy Specialist, University of Missouri, Bloomfield, MO.

New Tools for Crop Decisions

University of Missouri Extension agricultural economist Ray Massey and Pat Guinan, climatologist for MU Extension Commercial Agriculture, are collaborating with participants across the nation to make information easily available. Massey and Guinan recently presented at MU's Crop Management Conference in Columbia.

The websites are important because access to historical climate data helps farm operations that depend on favorable temperatures and precipitation patterns, Massey said.

In October, the **Midwestern Regional Climate Center** (MRCC) began offering online data free of charge, Guinan said. Previously, much of the climate center's data archive was available only by subscription.

The MRCC is a cooperative program of the Illinois State Water Survey and the National Climatic Data Center. Information is available at mrcc.isws.illinois.edu/CLIMATE. MRCC's Application Tools Environment, or "cli-MATE," offers data with easy-to-read visuals for free. Customizable charts include growing season statistics, frost/freeze probabilities and information on degree days.

The Vegetation Impact Program (VIP), at mrcc.isws.illinois.edu/VIP, monitors and assesses real-time information from MRCC on the same website. MU collaborates with other universities and agencies across the United States on this site. Data from VIP helps producers with frost and freeze guidance, stress degree days and the Keetch-Byram Drought Index. Information on chilling hours is being developed.

MU Extension also offers **Horizon Point** at agebb.missouri.edu/horizonpoint. There are rainfall runoff estimators, weed scouting aids, insect scouting aids, fall nitrogen application charts and planting-depth soil temperature, among the many offerings. Users can subscribe to receive advisories by email.

Missouri's **Mesonet** presents information from weather stations in 30 locations, 20 of which are real-time. A new station in Lawrence County is set to go live in 2014. The Mesonet site is agebb.missouri.edu/weather/stations.

The **Community Collaborative Rain, Hail and Snow Network** (CoCoRaHS) includes information from several hundred precipitation observers in Missouri counties at www.cocorahs.org. Users may also sign up to be a CoCoRaHS weather observer.

MU is one of 12 partners in the new five-year **"Useful to Usable"** (U2U) project to provide decision tools on climate, growing degree days, split nitrogen application and crop water use in the nation's Corn Belt. U2U is at drinet.hubzero.org/groups/u2u.

U2U has two online decision-support tools: AgClimate View provides a historical view of climate and yield across the Corn Belt. Growing Degree Day allows producers to enter planting date and hybrid to obtain estimates of when critical events such as silking, black layer and freeze might occur.
Yield data for corn and soybean can be plotted and compared over a five-year period on the U2U site. The interactive site also lets users compare nitrogen application using variable prices and percentages.

The **Missouri Climate Center**, through MU's Department of Soil, Environmental and Atmospheric Sciences, offers numerous weather and climate-related articles and resources at climate.missouri.edu.

Climate Basic is a new free data system offering weather, soil and crop data at a field level. You can sign up for this service at www.climate.com and enter University of Missouri in the "agent" field.

Guinan says there are many freely available climate resources on the Web, ranging from global to local. Some of these include:

- National Climatic Data Center, www.ncdc.noaa.gov
- NOAA Climate Portal, www.climate.gov
- Regional Climate Centers, www.ncdc.noaa.gov/customer-support/partnerships/regional-climate-centers
- State Climate Offices, www.stateclimate.org
- National Weather Service, www.weather.gov
- Climate Prediction Center, www.cpc.ncep.noaa.gov

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Future Meetings & Events -

Soil Health Workshop: The Keys to Soil Health - March 25, 2014 in Sikeston, MO. **March 26, 2014** in Kennett, MO. Contact Jill Staples at 573-239-2179 for more information.

Beekeeping Workshop - **March 27, 2014.** Poplar Bluff, MO. To register call the Butler County Extension Center at 573-68-8064.

Commodities and markets - http://extension.missouri.edu/seregion/fmmkt.htm