Agricultural News

East Central Missouri June 2009

Available on the web:

http://extension.missouri.edu/stcharles/agnl

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UNIVERSITY OF MISSOURI Extension

Pond Weed Control

Rich Hoormann, Agronomy Specialist

Warmer weather is about to make aquatic plants in ponds grow and spread even faster than usual. While ponds need some aquatic plants for creating good fishing habitat, too many aquatic plants changes them from desirable plants to weeds.

With extra runoff from this spring's rains, we could be at the beginning of a pond weed problem again this year. Runoff from fields or pastures with high P & K supplying power will increase the "bloom" potential for filamentous algae (moss) and about every other species of aquatic plants.

When pond plants become thick enough to interfere with fishing and swimming enjoyment, good management is required to reclaim the pond. There are a number of options for controlling pond weeds including hand removal, biological agents like grass carp, water level management and , chemical control. The key to choosing a successful control method is the correct identification of aquatic weeds and using its own growth cycle to pick the best management practices.

For help with identification and control information in you can contact the fisheries biologist at the Missouri Department of Conservation, **(636) 441-4554.** The MDC has several publications on pond management, including weed control.

However, for help with what's commonly available at your favorite Ag retail store and restrictions I have updated an " Ag Quick Facts (AQF) sheet titled: Aquatic Weed Herbicides Availability." This fact sheet lists weeds controlled and restrictions for livestock watering, fishing, swimming, etc.

There are a few new aquatic weed products available. Renovate 3 is a triclopyr product that controls emerged and floating plants. Clearcast (imazamox) is another new product that controls the same kind of pond weeds. While the new products aren't cheap, they are effective. The AQF sheet lists more information and its free for the asking.

Stop by or call the Montgomery County Extension center at 573-564-3733 for your free copy.

Inside this Issue:

Reducing Storage Mold in Small Squares

Rich Hoormann, Agronomy Specialist

With the extra rain this spring questions have come in concerning mold growth on the bottom course of small square bales stacked on pallets in barns.

There are a number of factors that could contribute to the problem of mold growth. I would like to go over them and if some particular point seems to fit the circumstances—make appropriate storage changes.

Dry bales of <20 percent moisture for small squares should be resistant to heating and potential for rewetting from high humidity in the first course of stacked bales. However, if the bale moisture was closer to 22 percent they would be closer to heating and mold growth conditions and much easier to rewet. This could be the major factor contributing to bottom layer mold growth.

But, the conditions in the barn could contribute to problems. For example, if the pallets and soil/screenings surface are moist or damp then it is likely that soil moisture is "wicking" upward creating a high humidity micro-climate and rewetting the bales.

Check the soil surface under the pallets by digging a bit into the soil and gravel. While I don't expect it to be bone dry, neither should it be "wet." If the soil and screening is the contributor, a clean rock base over the soil would interrupt the "wicking action" and reduce the high humidity under the bottom course. While screenings make a smooth surface, clean rock with larger pore space would interrupt moisture migration from the soil below and further reduce mold potential. It is recommend that clean rock, not minus, be used to disrupt the wicking action--if this has been determined to be the major moisture source.

Also, be sure that surface water is not moving into the barn hay storage area. With the heavy rains this Spring I have seen barns with damper than normal floor conditions. It doesn't need to be surface water flow, just enough sub flow to cause high humidity and rewetting conditions. If so, divert or use the new rock to reduce or eliminate the wicking problem.

If the bottom course is stacked flat, that would contribute to the formation of mold. Stacking the bottom course on edge would allow soil moisture to penetrate further into the bale (greater surface area and more opportunity for air movement) resulting in less mold potential.

Also, cleaning out the inter-pallet cavity of loose hay so that air can move would also be of help to greater air movement. Double stacking the pallets could create much greater air penetration and mold reduction, but from personnel experience the safety of slipping between the slats could be an issue with wide spaced pallet slats. But, if the slat spacing is not a foot and ankle hazard, this would be a quick and cheap fix.

Storing Large Round Bales

Wayne Shannon, Livestock Specialist

University of Tennessee animal scientists conducted a trial to compare different methods of storing large round bales of grass hay. The hay was cut and baled in June. The bales were weighed at the time of harvest and storage. Then they were weighed again the following January at the time of winter feeding. The following table lists the type of storage and the resulting percentage hay loss. Obviously, it would be ideal to store the hay inside, but that will not often be practical. The next best option is when the hay is stored on something that gets the hay off of the ground under a rain shedding cover.

Type of Storage	Percentage (%) Hay Loss
On ground, no cover	37%
On tires, no cover	29%
On ground, covered	29%
On tires, covered	8%
Net wrap on ground	19%
In barn	6%

Source: Dr. Clyde Lane, University of Tennessee Department of Animal Science.
Hay Storage AS-BV14

Rich Hoormann, Agronomy Specialist

Ag Café'—June 25

The topic of discussion will be controlling pond weeds. With extra runoff from this spring's rains, we could be at the beginning of a pond weed problem again this year. There are new products on the market along with the standards. What products to use and how to use it effectively is the key. Rich Hoormann, Agronomy Specialist, is this month's speaker.

Ag Café'—July 23

Topic of discussion will be Fence Line Grass & Weed Control Update. Rich Hoormann and Charlie Ellis will report on early results of pasture herbicide work in Montgomery County herbicide plots. The plots consist of herbicides that will suppress grass growth without killing under hot wires.

Topics are to the point with time to talk about *your* operation. Come try us out at this month's Ag Café!

Rescue Nitrogen Applications

Scott Killpack, Agronomy/Natural Resources Specialist

Corn is at a very wide range of growth throughout the region. Some fields are well along approaching shoulder height and beyond, while other fields are just barely getting started. Rainfall has also been widely varied with some areas receiving excessive levels. With the excessive rain comes the concern for loss of applied nitrogen. The probability is very high that some fields will suffer yield loss unless supplemental or rescue nitrogen is applied. Fields should be evaluated and a plan put together now so that you can be ready to go should you determine a need to apply additional nitrogen.

The question of diagnosing nitrogen deficiency can be a difficult one. Soil sampling is one option but you will need to factor the time for getting results back into the application timing window. To put it simply you may not have enough time to do soil testing. If you have sufficient time for soil testing be sure to follow the correct procedure for colleting samples. Sampling for soil nitrogen requires that you sample to a depth of two feet instead of the typical six inches. The procedure can be found at http://extension.missouri.edu/explorepdf/agguides/soils/G09177.pdf or can call your MU extension office to get a copy.

We certainly have had recent experience relating to issues of nitrogen loss from past seasons, for many as recent as 2008. I suspect there were many that made visual or other observations last year and then made a decision to or not to apply additional nitrogen. Perhaps we can draw upon those recent experiences to determine whether or not supplemental nitrogen will be needed this season. In 2008 nitrogen loss was measured by various ag -businesses and farmers from around the state and was found to range from 40 to 100 pounds per acre.

Method or source of nitrogen for making rescue applications is another question that arises. Virtually any method is good with the exception of broadcasting UAN solution onto a crop that is taller than one foot. Dry urea will also cause less leaf burn than ammonium nitrate. With ammonium nitrate application to corn taller than one foot will probably result in significant leaf burn and yield loss. When broadcasting dry material it would be best if applied when leaves are dry. Better rescue options include UAN solutions dribbled or injected between rows.

Equipment is often a major issue in making rescue nitrogen applications. When high clearance equipment is available options for rescue nitrogen applications are extended. Research has shown that we can still apply nitrogen up to the point of silking and improve yield.

The last question, at least for this newsletter, is how much rescue nitrogen should be applied. Not an easily answered question because we usually do not have specific information on how much was lost. It is further compounded knowing that loss will not be uniform across the field. However a reasonable starting point is to consider an amount around 20-30 percent of what was originally applied. Applied amounts in this range will be most helpful to deficient areas and will likely still boost yield in other areas of the field as well.

Bean Leaf Beetles in Soybean

Scott Killpack, Agronomy/Natural Resources Specialist

The following article was written by Wayne Bailey, MU Extension, Entomologist.

Bean leaf beetle adults leaving overwintering sites or moving from alfalfa fields after infesting them early this season generally move to soybean fields. These beetles are capable of flying long distances and will seek seedling soybean plants on which they will feed, mate, and then lay eggs in the soil for the next generation of beetles.

During this past week, bean leaf beetle numbers approached or exceeded economic levels in some Northern Missouri soybean fields. Most fields were early planted and received much precipitation following planting. Economic infestations of beetles were found in fields with and without insecticide treated seed.

Insecticide trials conducted in Missouri and other states show that Cruiser and Gaucho are both very effective at controlling this insect pest under most environmental conditions. The problems encountered with control of early season bean leaf beetle in these few fields may be due to several factors including the long period of time between planting and the appearance of the beetles, the dilution of the insecticides by continuous wet soil conditions, or by excessive numbers of beetles migrating into these fields.

We know first planted fields typically attract high numbers of beetles. In addition, laboratory research from Minnesota and field trials from Missouri, Nebraska and other states show that under normal conditions seed treatments are very effective at early season insect control for about a 45-day period followed by a reduction in efficacy over the next few weeks. It is likely that all of these factors had some influence on the economic infestations of bean leaf beetle adults observed in northern Missouri soybean fields. The following insecticides are recommended for bean leaf beetle control in soybean.

Watch for Flea Beetles in Field Corn

Similar to bean leaf beetle, some flea beetle problems were observed on corn plants produced from both nontreated seed and seed treated with the 250 rate of insecticide. Flea beetles often damage corn grown from nontreated seed if beetle populations are high coming out of winter. In contrast, plants from insecticide treated seed rarely experience problems with this early season pest. The factors discussed previously with bean leaf beetle are likely reasons for the economic damage seen with flea beetles in field corn. The problems encountered with seed-treated plants in northern Missouri soybean and corn fields are rare, but can occur when field conditions limit the efficacy of the insecticide seed treatments.

Estimating Wheat Yields

Rich Hoormann, Agronomy Specialist

Several methods have been developed to estimate potential grain yield after heading. The simplest is counting the number of heads per square foot. With a bit more time investment you can increase the accuracy by also counting the kernels per head.

Keep it Simple Method:

Dr. Emerson Nafziger of the University of Illinois has completed several experiments using different seeding rates to study tiller information. From this work he found that approximately 75percent of tillers form harvestable heads and that on average each head per square foot produces 1.2-1.3 bushes/acre. This is the basis of the simplest formula when the crop is headed and drying down.

Bushel/A = heads per 19.2" of row with 7.5" rows

I had a chance to follow-up with the yield estimates from field consultations during the 2007 spring freeze. Most of the yield reports I got after harvest matched the formulas projections I calculated as the most optimist estimate. I investigated 30+ fields. Is this estimate a guarantee? No, but it's not too far off. For the most reliable data, do counts on a minimum of 5 sites per 20 acres.

Greater Accuracy Method:

If you're willing to spend a bit more time you can increase accuracy by counting kernels per head. The following is my summation of techniques presented in the Small Grain Loss Adjustment Standards Handbook.

(heads/sq. ft. row X average # kernels/head) divided by 22 kernels/bu= bushel/acre

Count the number of kernels on 5 heads per sample site and use the average in the formula. Also, please note that for accuracy the handbook recommends using 10' of row per sample site.

If you would like to see more details on how the formula arrives at the above go to the following website: http://www.rma.usda.gov/handbooks/25000/2007/07_25430.pdf

Grass over Clovers by Grazing Cattle

Rich Hoormann, Agronomy Specialist

One of the byproducts of the wet spring and cool temperatures is the rank legume growth in pastures. Part of the explanation is the reduced cool season grass growth. The lack of growth is due to diseases (timothy) and the physiological response of the grasses to cool temperatures allowing legumes to compete.

One of the most asked forage questions is with all of the tremendous clover and lespedeza growth is why are cattle eating the grass and not the clovers?

I put this question to Dr. Craig Roberts and he reviewed several factors that are contributing to cattle preferring grass over legumes. While I am not trained as a livestock specialist and cannot go into detail on animal nutritional needs and preferences, I am interested in forage growth and utilization. I am passing this along because of the number of questions I have received.

The most important factor may be that cattle are managing the nutritional needs of the rumen by NOT eating as high of percentage of the very high quality forage available. His take is when grass is in the vegetative stage of growth it is as nutritious as legumes and "One thing to remember, cattle will not always select grass over legume. This is especially true if the grass is non-toxic." Also he mentions, "In a year like this, we have fields with 30 to 50 percent clover, especially white clover. We normally consider 25 percent clover as ideal. Because of this high proportion of white clover, there is a high risk of bloat. This may explain why cattle are going to the grass. You may recall that in many operations where bloat risk is high, one of the common recommendations is to provide a bale of dry hay, offered ad lib. Some cattle know instinctively to go to that bale."

As many cattle producers know, researchers are hard at work learning the "how and why" rules cattle use to select what to eat.

One other note is that there is research that reports springs like ours allows a fungus called *Rhizoctonia leguminicola* to grow on the stem and leaf surface of clovers. *Rhizoctonia leguminicola* produces the mycotoxin, slaframine. The compound produced by this species of Rhizoctonia causes slaframine poisoning, which is better known as the "slobbers." So, livestock may be avoiding clover patches that have this organism.

If you want to know more about this possible cause of cattle avoiding grazing clovers this spring look over the article at this website: http://jas.fass.org/cgi/reprint/73/5/1499.pdf