

# UNIVERSITY OF KENTUCKY WHEAT SCIENCE NEWS



Research & Education Center,  
Princeton, KY 42445

Volume 8, Issue 1 February 2004

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### **HIGHER NITROGEN PRICES AND ITS USE ON WHEAT** **Lloyd Murdock—Extension Soils Specialist**

The price of wheat is up, which is good news, but the price of nitrogen (N) has also increased which means we want to use good management of N to keep the costs down.

I have looked over several N trials on wheat that we have done the last few years and calculated cost and returns related to N applications and grain prices. I have found, at the present price structure, that there should be little change from the recommendations that we presently have. If the price of wheat were to drop substantially, then we would want to reduce the amount of N that we apply. However, with the higher prices of N we still need to look at any possible savings we could make.

#### **Fall**

We see no reason to add N in the fall in almost all of the normal situations. The two exceptions that we can sometimes see are a very deficient N crop grown immediately in front of the wheat or a late planted wheat crop (after the first week of November). Fall N would help with good tillering in these two situations. With normal planting times, I have seen good tillering this year without fall N applied.

#### **February**

The N applied at "green-up" in February, the first of the spring split applications, is a beneficial application, but is subject to loss if periods of high rainfall occur after the application. Therefore, only add the amount of N needed to do the job and do not anticipate much carryover later into the season. This application is timed for green-up of the crop and is designed to "jump start" the plant to maintain the tillers that were initiated during the fall growth.

Except for unusual conditions or a poor stand or tillering, only small amounts of N are needed at this time. Usually 30 or 40 lbs/a will do the job. If higher rates are not needed, but added, they will be subject to loss if excessive rains occur before jointing.

#### **March**

This is the most important N application date for wheat. This is timed to be just before or at early jointing. It is when the plant begins to rapidly take up large amounts of nitrogen. Nitrogen added at this time will have the least risk of loss and will be the most efficient N of the three application times. If all the nitrogen is delayed until this application, the total amount of N applied can be reduced by 10 lb/ac because of the increased efficiency and the expected yield loss will be about 3 bu/ac due to only a single application.

The amount of nitrogen used at this date will vary for a number of reasons. If you routinely expect to raise less than 70 bu/ac then 60 to 90 lb/ac is sufficient. The 90 lb/ac rate is capable of producing 70+ bu/ac. If you are managing for higher yields apply a total of 100-105 lb/ac in the two spring applications or 90-95 lb/ac if applying in March only. If you are no-tilling your wheat, apply 90-120 lb/ac of N in the two spring applications. The 90 lb/ac rate will maximize yields about 60% of the time with a penalty of only a few bu/ac on the "off" years. The 120 lb/ac rate will be enough to give maximum yields under the conditions where we lose a lot of N.

#### **Summary**

I hope you have a great year with high yields and high prices. If the wheat prices drop to where they have been in the past we will need to make some definite changes in rates and use nitrogen even more efficiently than described above.

## **DO YOU HAVE HERBICIDE RESISTANT RYEGRASS?**

**William W. Witt, James R. Martin, and Dottie Call**

We have a project with the Kentucky Small Grain Promotion Council to determine the extent of herbicide resistant ryegrass in Kentucky. To complete this project, we need the help of wheat growers and others interested in wheat production.

Italian ryegrass (*Lolium multiflorum*), also called annual ryegrass, is a severe weedy grass of wheat and is found in all wheat growing regions in Kentucky. Herbicide resistant ryegrass has not been confirmed in Kentucky but there are causes for concern. There have been cases where Hoelon failed to provide adequate control following multiple treatments. Additionally, we have a 25-year history of using glyphosate, mostly as a Roundup formulation, in no-tillage corn and soybeans. We have noted that ryegrass control with glyphosate was variable during this period. We do not have evidence that Kentucky's annual ryegrass is resistant to glyphosate, we do suspect different levels of tolerance that resulted in variable control over the years.

Biotypes that were resistant to Hoelon, and other ACCase herbicides, were first observed in Oregon in 1987. Since then, other resistant biotypes were reported in Arkansas, Georgia, Maryland, North Carolina, South Carolina, Tennessee, and Virginia. The occurrence of ACCase resistant Italian ryegrass was associated with repeated use of Hoelon (diclofop-methyl) in wheat. The occurrence, or its potential development, of ACCase-resistant ryegrass biotypes is a significant issue for Kentucky wheat growers. Hoelon is the standard herbicide option for managing Italian ryegrass in wheat and has been used for many years and ACCase resistant-ryegrass has been confirmed in neighboring states. We need to know if ACCase resistant ryegrass occurs in Kentucky and the magnitude of the problem.

There are other alternatives registered for controlling Italian ryegrass in wheat but they tend to be less effective over a broad range of conditions and weed sizes compared with Hoelon. Osprey (mesosulfuron) is an experimental ALS-inhibiting herbicide (it has a different mechanism for killing ryegrass than Hoelon) that is effective in controlling ACCase-resistant biotypes of Italian ryegrass. However, the ALS herbicides also have a very specific site of action and many weedy species have developed herbicide resistance to the ALS chemistry including smooth pigweed in Kentucky. While Osprey could solve the ACCase-resistant ryegrass in the short term, the potential for resistance buildup is just as great with this herbicide.

Since Osprey is an experimental herbicide, the only option for growers to use it would be through a Section 18 registration. Some states with ACCase-resistant Italian ryegrass have petitioned the Environmental Protection Agency for Section 18 registrations

for using Osprey for managing this problem in wheat but have not received approval.

If such resistance can be documented in Kentucky, then a Section 18 registration for Osprey may be warranted for Kentucky. However, Section 18 petitions to EPA require documentation on the severity of the problem. This project will provide the documentation needed for such petitions.

To participate in this project is easy. All you need to do is collect ryegrass seeds from plants growing in wheat. Here is what needs to be done.

1. Collect seedheads from 25 **mature** ryegrass plants.
2. Place the seeds in a paper bag or similar container.
3. Put your name, field identification, county, and date collected on container.
4. Complete the field history form on the next page.

## **FOLICUR SECTION 18 APPLICATION SUBMITTED**

**Don Hershman – Extension Plant Pathologist**

On January 27, 2004, The Kentucky Department of Agriculture submitted a Section 18 application to the Environmental Protection Agency (EPA), seeking approval for use of the fungicide Folicur for Fusarium head blight (FHB) suppression in Kentucky. There is a 50 day review period, and assuming a favorable response, we should have plenty of time to get product into the system and an educational program in place before the critical FHB period hits, around the beginning of May.

I also have plans for Kentucky to participate in a national Fusarium head blight forecasting system being developed primarily by scientists in Ohio and Pennsylvania, but in cooperation with others. The plan at this time is to make a website available to all Kentucky wheat producers which would allow input of farm-specific temperature and moisture data, and result in a risk rating for FHB. This will only be of academic interest if EPA does not grant a section 18 for Folicur. However, if Folicur use is given a green light, wheat producers will be able to use the forecasting system to help them decide if a Folicur spray might be needed. I need to add here, that FHB forecasting is based on a model that is still under development and is only about 80% accurate. In addition, it is focused exclusively on FHB symptom expression and not deoxynivalenol (DON) accumulation in grain. Based on our experience last year where DON accumulation in grain far exceeded FHB symptom expression in fields, this could limit the usefulness of the current FHB forecasting system if conditions like we experienced last spring occur in 2004.

I will keep you informed of all future FHB developments as they occur.

**2004 IPM Training School**  
**Wednesday, March 17**  
**UK Research Center—Princeton**

The 2004 IPM Training School is scheduled for Wednesday, March 17. The meeting will be held at the UK Research Center in Princeton. Registration will open at 8:30 AM with the meeting starting at 9:00 AM and ending at 4:00 PM.

Pest identification will be a major part of the training school. Weed, insect and disease problems of corn, soybeans, and small grains will be covered. A review of corn diseases will include the discussion of Mycotoxins. An update of pest problems in Kentucky will include the following topics: Soybean Stem Borer, Soybean Aphid, Soybean Rust, and New Technology for Corn Insect Management

Advance registration is not needed and the meeting is open to the public free of charge.

Program has been approved for 5.5 hours of CEU's for Certified Crop Advisers. (3.0 Pest Management, 2.0 Crop Management and .5 Soil and Water Management)

Program has also been approved for 3 general hours and 1 specific hour for Categories 1 ag applicator, 10 demo and research, and 12 retail pesticide sales agent (dealer) for Kentucky Pesticide Applicator Training.

For additional information contact Patty Lucas at 270-365-7541 extension 218 or [plucas@uky.edu](mailto:plucas@uky.edu)

**Herbicide Resistant Ryegrass Survey in Kentucky**  
**Field History Form**

(Complete a form for each seed source)

Grower Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Field History:

From 1998-2004, how many years was this field in wheat? \_\_\_\_\_

How many years was ryegrass a problem in wheat? \_\_\_\_\_

From 1998-2004, how many years was this field in no-till corn? \_\_\_\_\_

How many years was ryegrass a problem in no-till corn? \_\_\_\_\_

Herbicide History:

If a wheat herbicide was applied for ryegrass in the fall of 2003 or in 2004, please give the name and amount per acre. Herbicide: \_\_\_\_\_ Amount/Acre \_\_\_\_\_

What herbicides were used for ryegrass control in other years? \_\_\_\_\_

**Send this form and ryegrass seeds to:**

W. W. Witt

411 Plant Science Building

1405 Veterans Drive

Lexington KY 40546-0312

[wwitt@uky.edu](mailto:wwitt@uky.edu)

[www.uky.edu/Ag/Agronomy/Weeds](http://www.uky.edu/Ag/Agronomy/Weeds)

For More Information, Contact:

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Lloyd W. Murdock, Extension Soils Specialist

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