UNIVERSITY OF KENTUCKY
COLLEGE OF AGRICULTURE
Lexington, Kentucky 40546-0091

COOPERATIVE EXTENSION SERVICE
Research & Education Center, Princeton, KY 42445

UNIVERSITY OF KENTUCKY WHEAT SCIENCE NEWS

Volume 5, Issue 4 November 2001

INTRODUCING GERALD CLAYWELL

UK's Wheat Science group and the Department of Agronomy are pleased to announce that Gerald Claywell has taken the position of Research Specialist in charge of small grain variety testing. Gerald will succeed Charles Tutt who retired last spring.

Gerald brings a wealth of experience in extension, having worked for 12 years as a county agent in Oklahoma, Tennessee, and most recently, Calloway County. This experience has given Gerald plenty of opportunities to work with farmers and he looks forward to doing more of that in his new position. Gerald holds a B.S. degree from UK and an M.S. degree from Murray, and has a strong interest in applied research.

Feel free to contact Gerald at the West Kentucky Research and Education Center (270-365-7541, Ext. 250) or by email at gclaywel@ca.uky.edu on anything pertaining to the small grain variety testing program.

Inside This Issue:

Mark You Calendars

Winter Wheat Workshop—Jan 9, 2002 at the Warren Co Extension Office

For More Information, Contact Dottie Call

FALL CONDITIONS ARE FAVORABLE FOR CONTROLLING RYEGRASS

James R. Martin, Extension Weed Scientist

The late summer and early fall rainfall has been favorable for emergence of Italian ryegrass. This can be beneficial for wheat growers, particularly if ryegrass plants have already emerged and been destroyed with preplant tillage practices or burndown herbicide applications.

The likelihood that no additional control measures will be needed after wheat emergence depends on several factors including timing of the preplant tillage or burndown herbicide applications relative to ryegrass emergence. Delaying these practices allows for more time for ryegrass emergence to occur and eventually be destroyed with the preplant practices. In 1995 burndown applications in no-tillage wheat provided approximately 95% season-long control of ryegrass. This particular study was planted in late October and rainfall occurred at least nine days during the four weeks prior to planting.

Do not take it for granted that preplant tillage or burndown applications will eliminate the need for following up later with postemergence applications. The first four to eight weeks after planting can be a critical time to check wheat fields and implement a control strategy for ryegrass. Since weather conditions have been favorable for ryegrass seed germination, it is likely that the emergence will occur in a narrow time frame compared to occurring over a period of several weeks when conditions are cool and dry. This should allow for a more uniform size of plants, thus making it easier for staging of ryegrass for postemergence herbicide applications.

Achieve, Everest, and Hoelon are postemergence herbicides currently available for controlling annual ryegrass in wheat in Kentucky. Weed control ratings from last year's study at the UKREC indicated that Achieve and Everest provided 90% and 80% control, respectively, when they were applied on November 11 and ryegrass plants had an average of 2 leaves (Table 1). However, control with Achieve or Everest tended to decline when applications were delayed until late February and mid- March and plants had 3 or more tillers. Although Hoelon was the most consistent of the three herbicides in managing Italian ryegrass, there was a trend in less control as applications were delayed.

Since these products do not control broadleaf weeds, there is interest in tank mixing them with other products in order to control a broad spectrum of weed species. Data from last year showed that tank mixing Hoelon with either Harmony GT or Harmony Extra reduced ryegrass control by 23 to 39% compared to applying Hoelon alone. Antagonism from tank mixing can also be a problem when certain broadleaf herbicides are mixed with Achieve and Everest.

Recommendations for Achieve, Everest, and Hoelon are discussed in Table 2.

Table 1. Italian Ryegrass Control in Wheat with Postemergence Herbicides Applied at Different Times. [1] (J.R. Martin, W.W. Witt and D. Call, UKREC 2001)

CHEMICALS	Timing of Applications		
	Nov 11, 2000	Feb. 26, 2001	March 19, 2001
	---------- Italian Ryegrass Control (%) [2] ----------		
Achieve 7 oz/A Supercharge 0.5 %	90	63	---------- [3]
Achieve 9.5 oz/A Supercharge 0.5 %	90	77	60
Everest 0.62 oz/A Activator 90 0.25 %	80	77	43
Hoelon 1.33 pt/A	100	87	---------- [3]
Hoelon 2 pt/A	100	96	---------- [3]
Hoelon 2.67 pt/A	100	100	80
Hoelon 2 pt/A Harmony GT 0.5 oz/A Surfactant 0.25 %	----------[3]	73	---------- [3]
Hoelon 2 pt/A Harmony Extra 0.5 oz/A Surfactant 0.25 %	---------- [3]	57	---------- [3]
LSD (0.05)		27	

[1] Application Timings:
11-11-00: Ryegrass with an average of 3 leaves.
2-26-00: Ryegrass with an average 3 tillers.
3-19-01: Ryegrass fully tillered.

[2] Visual ratings were made on Apr 17, 2001 and were based on percent control of ryegrass biomass relative to non-treated check.

3 ---------- Treatment was not applied.

Table 2. Postemergence Herbicides Recommended for Italian Ryegrass Control in Wheat in Kentucky.

CHEMICALS	REMARKS
ACHIEVE 7 to 9.6 oz/A + SUPERCHARGE adjuvant 4 pt/100 gal (approx. cost $ 20 -$ 25/A) [1]	Apply to wheat or barley when annual ryegrass is in the 1- to 4-leaf stage (total leaves including tillers). Best control may be obtained in the fall prior to dormancy. Avoid applications when there is a heavy dew, crops are stressed, or when temperature is less than 40^0F up to 48 hours before or after application. ACHIEVE may be tank mixed with such herbicides as Buctril or MCPA ester. Apply other herbicides as a separate spray and allow at least a 5-day interval between ACHIEVE followed by the other herbicide and a 15-day interval when applying the other herbicide followed by ACHIEVE. Do not apply if rainfall is expected less than one hour after treatment. Do not harvest within 60 days after treatment. Immature crops may be grazed or cut for hay 30 days after treatment. Mature straw and grain may be fed to livestock 45 days after treatment. Rotational crops of cereal grains and leafy crop groups may be planted 30 days after application. Other crops may be planted 106 days after treatment.
EVEREST 0.61 oz/A + SURFACTANT 0.25 % (approx. cost $ 19 /A) [1]	Apply only one treatment per season to wheat that has a minimum of one leaf to a maximum of 4 leaves on the main stem plus two tillers. Do NOT apply before crop emergence has completed or after wheat jointing has initiated. Apply when annual ryegrass plants have 1 to 4 leaves on the main stem until end of tillering. Applications made during stress conditions may lead to crop injury and reduced weed control. The use of EVEREST may help minimize the risk of developing ACCase (Hoelon)- resistant biotypes of annual ryegrass. EVEREST may be tank mixed with such herbicides as Aim, Buctril, Harmony Extra, and 2,4-D. Combinations of EVEREST with dicamba (Banvel, Clarity) may reduce grass control. Do not apply when rainfall is expected within one hour. Do not harvest wheat grain and straw for livestock until 60 days after treatment Use a rotational interval of 4 months for wheat, and 9 months for barley, and soybeans.
HOELON 1.33 to 2.66 pt/A (approx. cost $ 16 - $ 27/A) [1]	Apply only one treatment per season before first node (jointing) develops in wheat (consult label for use of HOELON in winter barley). Use 1.33 pt/A HOELON for annual ryegrass plants that are in the 1- to 3- leaf stage of growth. Apply 2 pt/A for 3- to 4- leaf annual ryegrass plants. Use 2.66 pt/A when plants have 5 leaves to 2 tillers. Note label directions on precautions if crop oil concentrate is used as an additive. Do not apply 2,4-D, Banvel, or Harmony Extra within 5 days of HOELON treatment as reduced grass control will occur. When applying in liquid nitrogen fertilizer, use at least 2 pt/A of HOELON and do not exceed 50% concentration of liquid fertilizer in water. Do not allow livestock to graze treated fields. Do not harvest forage, hay, or straw before grain harvest. Do not apply within 77 days before wheat harvest.

[1] Costs include expenses for chemicals and application. Prices will vary depending on retail outlet and other factors.

SEVERAL GLYPHOSATE FORMULATIONS AVAILABLE

James R. Martin, Extension Weed Scientist

The fact there are several glyphosate products available for wheat growers can be beneficial but also confusing.. It is unlikely there are any huge differences in effectiveness among glyphosate formulations; however, there are differences in rate structure and recommendations regarding use of surfactants. Several examples of glyphosate formulations for burndown applications in wheat are listed in the following table. Rates are expressed as: 1) amount of product per acre, 2) amount of active ingredient (ai) per acre, and 3) acid equivalent (ae) per acre. The active ingredient is based on glyphosate acid plus salt. The acid equivalent is based on glyphosate acid. **ALWAYS CONSULT THE PRODUCT LABEL FOR SPECIFIC DIRECTIONS.**

glyphosate			glyphosate	
(4 lb ai/gal)	Product	Rate/A	(lb ai/A)	*(lb ae/A)*
(3lb ae/gal)				
Annual weeds <6" TALL	1.5 to 2 pt/A	(24 to 32 fl oz/A)	(0.75 to 1lb ai/A)	*(0.56 to 0.75 lb ae/A)*
Annual weeds >6" TALL	2 to 3 pt/A	(32 to 48 fl oz/A)	(1 to 1.5 lb ai/A)	*(0.75 to 1.13 lb ae/A)*
Certain Perennials	4 to 8 pt/A	(64 to 128 fl oz/A)	(2 to 4 lb ai/A)	*(1.5 to 3 lb ae/A)*

Examples of products: Acquire[1], Cornerstone[1], Credit[1], Credit Systemic[1], Gly-Flo[1], Glyfos[1], Glyfos X-tra [3], Glyphomax[1], Glyphomax Plus [3], Glyphosate[1], Glyphosate Original [1], Gly Star Original [1], Gly Star Plus [3], Honcho [1], Mirage [1], Rattler[1], Roundup Original [1], Roundup Ultra [3], Touchdown[1] *(Touchdown contains diammonium salt of glyphosate and has slightly less than 4 lb ai/gal but has 3 lb ae/gal)*

glyphosate			glyphosate	
(5 lb ai/gal)	Product	Rate/A	(lb ai/A)	*(lb ae/A)*
(3.83 lb ae/gal)				
Annual weeds <6" TALL	1.25 to 1.6 pt/A	(20 to 26 fl oz/A)	(0.78 to 1lb ai/A)	*(0.6 to 0.77 lb ae/A)*
Annual weeds >6" TALL	1.6 to 2.5 pt/A	(26 to 40 fl oz/A)	(1 to 1.56 lb ai/A)	*(0.77 to 1.2 lb ae/A)*
Certain Perennials	3.2 to 6.4 pt/A	(51 to 102 fl oz/A)	(1.99 to 4 lb ai/A]	*(1.53 to 3.06 lb ae/A)*

Example of product: Roundup UltraMax [3]

glyphosate			glyphosate	
(5.4 lb ai/gal)	Product	Rate/A	(lb ai/A)	*(lb ae/A)*
(4 lb ae/gal)				
Annual weeds <6" TALL	1.13 to 1.5 pt/A	(18 to 24 fl oz/A)	(0.76 to 1.01lb ai/A)	*(0.56 to 0.75 lb ae/A)*
Annual weeds >6" TALL	1.5 to 2.25 pt/A	(24 to 36 fl oz/A)	(1.01 to 1.52 lb ai/)	*(0.75 to 1.13 lb ae/A)*

Example of product: Gly Star 5 [2], Roundup Custom [2]

glyphosate			glyphosate	
(71.4 % WDG)	Product	Rate/A	(lb ai/A)	*(lb ae/A)*
(64.9% ae)				
Annual weeds <6" TALL	0.88 to 1.2 lb/A	(14 to 19 dry oz)	(0.63 to 0.86 lb ai/A)	*(0.57 to 0.78 lb ae/A)*
Annual weeds >6" TALL	1.2 to 1.8 lb /A	(19 to 29 dry oz)	(0.86 to 1.29 lb ai/A)	*(0.78 to 1.17 lb ae/A)*

Example of product: Roundup Ultra Dry [3]

ADDITIVES: Dry Ammonium Sulfate at 1 to 2% by weight (8.5 to 17 lb/100 gal) may be included with any of these glyphosate products to improve weed control. Recommendations for use of surfactants will vary depending on product. The following footnotes correspond with above glyphosate products:

1 A nonionic surfactant at 2-4 qt/100 gal MAY BE USED as an adjuvant.
2 A nonionic surfactant is REQUIRED at 2-4 qt/100 gal as an adjuvant
3 Do NOT include a nonionic surfactant.

For More Information, Contact:

Dottie Call, Wheat Group Coordinator
UK Research and Education Center
P.O. Box 469, Princeton, KY 42445

Telephone: 270/365-7541 Ext. 234

E-mail: dcall@ca.uky.edu

Visit our Website:
http://www.ca.uky.edu/ukrec/welcome2.htm

_____

Lloyd W. Murdock, Extension Soils Specialist

Cooperative Extension Service
U.S. Department of Agriculture
University of Kentucky
College of Agriculture
Lexington, KY 40546-0091

AN EQUAL OPPORTUNITY EMPLOYER