

## **WEEDY GRASSES—AN INCREASING AND FRUSTRATING PROBLEM IN WHEAT**

**James R. Martin, Extension Weed Scientist**

Problems with weedy grasses in wheat have risen substantially in recent years. Because of the favorable early fall weather, there is reason to believe this trend will continue this season.

Dealing with weedy grasses in wheat can be a frustrating experience. Mistakes in identification occur because some species are difficult to distinguish from one another, particularly during early growth stages. Also, management strategies have not been perfected for weedy grasses compared with those used for controlling wild garlic and many broadleaf weeds.

Italian ryegrass, hairy chess, and cheat are among the major weedy grasses in Kentucky's wheat fields. Examples of other grasses that may occur to a lesser extent include field brome, downy brome, annual bluegrass, little barley, and foxtail barley.

Italian ryegrass (also known as annual ryegrass) appears to be the most common and competitive species among the weedy grasses in wheat. One ryegrass plant per square foot may reduce wheat yield by approximately 4%. Competition is largely a function in reducing tillering of wheat, consequently early-season control is critical to limiting yield reductions.

### **IDENTIFICATION**

There are two major reasons why grassy weeds are difficult to identify. Some species are similar in appearance and may require several weeks of

growth before distinguishing characteristics develop. Also, identification of plants in the seeding stage may be impossible in cases where vegetative components such as pubescence (hairs) are not consistent for different plants of the same species.

Information on identifying characteristics for certain grasses are indicated in Table 1.

### **CONTROL**

Postemergence herbicides play a major role in managing weedy grasses in wheat. Achieving control of weedy grasses requires balancing a number of factors. Ideally the majority of weeds should be emerged at the time of application; the crop and weeds should be at the recommended growth stage; and the weather conditions should be favorable for optimum activity of herbicides. The fact these factors are largely impacted by environmental conditions makes it difficult to achieve effective control consistently. As the wheat growing season progresses into the winter months, the likelihood of having favorable conditions for grass control diminishes.

Herbicide programs that are used to manage Italian ryegrass offer more flexibility and a greater level of control compared with those used to for other weedy grasses. Postemergence herbicides registered for managing weedy grasses in wheat in Kentucky are listed in Table 2.

**Table 2. Postemergence Herbicides Registered for Control or Suppression of Weedy Grasses in Wheat in Kentucky**

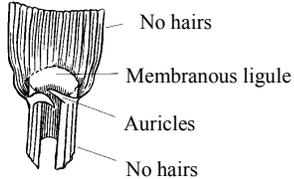
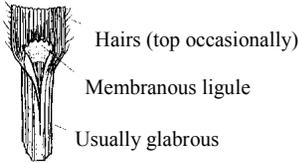
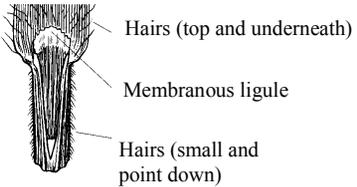
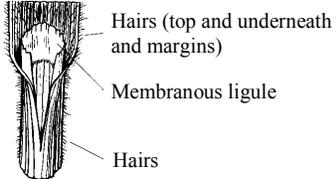
CHEMICALS	GRASSY WEEDS CONTROLLED or SUPPRESSED	REMARKS
<p>ACHIEVE 40 DG (tralkoxydim) 7 to 9.6 oz/A + SUPERCHARGE adjuvant 4 pt/100 gal</p> <p>(Consult label for conditions that require AMS)</p> <p>(approx. cost \$20—\$25/A)<sup>1</sup></p>	<p>Italian Ryegrass</p>	<p>Apply to wheat or barley when annual ryegrass is in the 1- to 4-leaf stage (total leaves including tillers). Best control may be obtained in the fall prior to dormancy. Use the high rate when dry weather, large weeds, dense weed pressure, or dense crop canopy. Avoid applications when there is a heavy dew, crops are stressed, or when temperature is less than 40°F 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.</p>
<p>EVEREST 70 WDG (flucarbazone) 0.61 oz/A + SURFACTANT 1 qt/100 gal</p> <p>(approx. cost \$19/A)<sup>1</sup></p>	<p>Italian Ryegrass (suppression)</p>	<p>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, Harmony GT, and 2,4-D Amine or Ester. 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.</p>

**Table 2. (Continued)**

<b>CHEMICALS</b>	<b>GRASSY WEEDS COTROLLED or SUPPRESSED</b>	<b>REMARKS</b>
HOELON (diclofop) 1.33 to 2.66 pt/A  (approx. cost \$ 16 - \$ 27/A) <sup>1</sup>	Italian Ryegrass	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.
MAVERICK 75DG (sulfosulfuron)  0.67 oz/A + SURFACTANT 2 qt/100 gal  (approx. cost \$ 14/A)	Cheat Downy Brome Hairy Chess  May provide some suppression of Italian Ryegrass	Apply only one treatment per season after wheat emerges but before jointing (Feekes' 6) For best brome species control, apply in the fall when brome plants are in the 2-3 leaf stage. MAVERICK provides control of certain broad-leaf species. MAVERICK may be tank mixed with 2,4-D ester, Buctril, MCPA ester, or Sencor. Wheat may be grazed immediately, however do not harvest hay until 30 days after application. Do not harvest for grain or straw within 55 days of application. Allow a 3-month rotational interval for STS-soybeans or 5 months for regular soybeans if soil pH is < 6.5 and cumulative precipitation of 30 inches. Consult label for other rotational crop restrictions.
SENCOR 75 DF (metribuzin)  3 to 8 oz/A  (approx. cost \$9 - \$14/A) <sup>1</sup>	May provide some suppression of the following: Annual Bluegrass Cheat Downy Brome Little Barley	<b>Apply only to wheat or Barley varieties that are tolerant and recommended for use with SENCOR.</b> When secondary roots are smaller than 1 inch, use 3 oz/A when crop has 2 leaves to 2 tillers. Once crop has been planted at least 75 days and has secondary roots larger than one inch, use 5 oz/A for 3 to 4 tillers crops and 8 oz/A for crops with more than 4 tillers. Allow at least 2 weeks for crop to recover from winter dormancy before treatment. Crop injury may occur if SENCOR is mixed with fertilizer, applied before specified time, seed are planted less than 1 inch deep, or if the crop is stressed by frost or other factors. For optimum control, apply before broadleaf weeds exceed 1 inch in height, or grasses have more than 2 leaves. Wheat may be grazed 14 days after application. Do not harvest wheat as grain within 21 days after application. Do not graze or harvest barley before crop maturity.

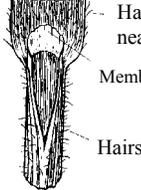
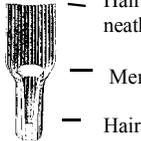
<sup>1</sup> Costs include expenses for chemicals and application. Prices will vary depending on retail outlet and other factors.

**Table 1. Vegetative Characteristics of Certain Weedy Grasses**

SPECIES	AURICLES	LIGULE	HAIRINESS			LEAF COLLAR SECTION	OTHER CHARAC- TERISTICS
			BLADE	SHEATH	NODE		
<b>Italian Ryegrass</b> ( <i>Lolium multiflorum</i> )	Yes	Membranous 1-4 mm Erose	No	No	No	 <p>No hairs Membranous ligule Auricles No hairs</p>	Glossy Leaf and Sheath Surfaces
<b>Cheat</b> ( <i>Bromus secalinus</i> )	No	Membranous -4 mm Toothed	Top Surface Occasion- ally; Lower Surface Rarely	Rarely	Often	 <p>Hairs (top occasionally) Membranous ligule Usually glabrous</p>	
<b>Hairy Chess</b> ( <i>Bromus commutatus</i> )	No	Membranous 1-4 mm Toothed	Both Surfaces	Yes Retorse	Often	 <p>Hairs (top and underneath) Membranous ligule Hairs (small and point down)</p>	
<b>Downy Brome</b> ( <i>Bromus tectorum</i> )	No	Membranous 1-3 mm	Both Surfaces	Yes	No	 <p>Hairs (top and underneath and margins) Membranous ligule Hairs</p>	

<sup>1</sup> This is intended as a guide. Characteristics may vary depending on environmental conditions. — Information not available or incomplete.

**Table 1. Vegetative Plant Characteristics of Certain Weedy Grasses**

SPECIES	AURICLES	LIGULE	HAIRINESS			LEAF COLLAR SECTION	OTHER CHARACTERISTICS
			BLADE	SHEATH	NODE		
<b>Field Brome</b> <i>(Bromus arvensis)</i>	No	Membranous -4 mm Jagged	Both Surfaces	Yes	Often	 <p>Hairs (top and underneath) Membranous ligule Hairs</p>	
<b>Little Barley</b> <i>(Hordeum pusillum)</i>	—	Membranous 0.5-0.8 mm	Sometimes Top & Lower Surfaces  Scabrous (Sandpapery)	Sometimes	—		 <p>Unique Seed Remain Attached to Seedlings</p>
<b>Foxtail Barley</b> <i>(Hordeum jubatum)</i>	No	Membranous 0.5 to 1 mm Truncate	Sometimes Top & Lower Surfaces  Scabrous (Sandpapery)	Sometimes	No	 <p>Hairs (top and underneath sometimes) Membranous ligule Hairs (sometimes)</p>	
<b>Annual Bluegrass</b> <i>(Poa annua)</i>	No	Membranous -1.8 (5) mm Truncate or Acute	No	No	No	 <p>No Hairs Membranous ligule No Hairs</p>	 <p>Boat Shape Leaf Tips</p>

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@uky.edu](mailto:dcall@uky.edu)

Visit our Website:  
[www.ca.uky.edu/ukrec/index.htm](http://www.ca.uky.edu/ukrec/index.htm)

---

Lloyd W. Murdock, Extension Soils Specialist

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

An Equal Opportunity Employer

---

Official Business  
Penalty for Private Use, \$300