

EVALUATING THE POTENTIAL OF NEW HERBICIDES FOR MANAGING ITALIAN RYEGRASS IN WHEAT IN KENTUCKY

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INTRODUCTION:

Current herbicide options are somewhat costly and inflexible in regards to application timing. Also, repeated use of some options such as Hoelon (diclofop-methyl) or Achieve (tralkoxydim) may increase the risk of developing populations that are resistant to Accase inhibiting herbicides. Although herbicide - resistant Italian ryegrass has not been confirmed in Kentucky, there a number of states in the Southeast that have documented its presence.

Studies were conducted during the last two years to compare and evaluate certain products recently registered for ryegrass control as well as experimental herbicides being developing for controlling weedy grasses in wheat.

Italian Ryegrass Control

Achieve (tralkoxydim), Axiom (flufenacet + metribuzin), Discover (clodinafop-propargyl), Everest (flucarbazone), Hoelon (diclofop-methyl), and Maverick (sulfosulfuron) were evaluated for controlling Italian ryegrass during 2000 and 2001 in Pioneer 2552 wheat. Beyond (imazamox) was evaluated in 2001 in an experimental Clearfield wheat that is tolerant to imidazolinone herbicides. Hoelon, Achieve, and Everest are currently registered and available for controlling Italian ryegrass; whereas, Axiom, Discover, Maverick and Beyond (for Clearfield wheat only) are not registered for use in Kentucky.

Achieve, Axiom, and Everest were more consistent in controlling Italian ryegrass when applied in the fall compared with applications made in the spring (Table 1). Hoelon and Discover provided at least 87% control of Italian ryegrass for applications made in the fall or early spring and were superior to the other herbicides when applications were delayed until mid-March. Beyond at 5 or 6 oz/A provided at least 90% control of Italian ryegrass up to mid-February (Table 2). However, control declined substantially when Beyond applications were delayed until mid-March. Italian ryegrass control with Maverick did not exceed 60 % in either year.

Carryover of Wheat Herbicides to Double-Cropped Soybeans

Everest (at 0.62 oz/A) and Maverick (at 0.67 oz/A) were applied during the spring in wheat and evaluated for their potential to carryover and injure double-cropped soybeans. The two soybean varieties in this study were AG4702 (Roundup Ready) and AG4301 (Roundup Ready plus STS).

CONCLUSIONS:

All herbicides generally provided better control when applied in the fall compared with spring applications. Hoelon and Discover were usually more effective than the other herbicides in managing ryegrass that overwintered and beginning to tiller. Achieve, Axiom, and Everest were capable of providing early-season control, but regrowth did occur sometimes; therefore indicating that escapes may require additional control measures in some years. The level of control with Beyond applications in Clearfield wheat was similar to that of Hoelon, but regrowth may be greater with Beyond when applications are delayed. Maverick does not offer effective postemergence control of Italian ryegrass and may potentially carryover and injure double cropped soybeans that do not have the STS trait.

Table 1. Italian Ryegrass Control with Fall or Spring Herbicide Applications in Pioneer 2553 Wheat (UKREC 2000 and 2001).					
Herbicide Treatments ¹	% Ryegrass Control at Different Timing of Applications ^{2 3}				
	2000		2001		
	Fall	Spr 1	Fall	Spr 1	Spr 2
Achieve 7 oz/A	67	70	90	63	----
9.5 oz/A	67	67	90	77	60
Axiom 10 oz/A	63	----	100	80	60
Discover 4 oz/A	----	----	100	100	93
Everest 0.62 oz/A	77	----	80	77	43
Hoelon 1.33 pt/A	87	83	100	87	----
2 pt/A	----	----	100	96	----
2.67 pt/A	95	90	100	100	80
Maverick 0.5 oz/A	60	7	----	----	----
0.67 oz/A	----	----	----	33	----
LSD (0.05)	13		26		

¹ Adjuvants were included with Achieve, Discover, Everest, and Maverick according to label directions.

² Fall = mid-November approximate 2 leaf ryegrass. Spr 1= mid February and 2-3 tillered ryegrass.
Spr 2 = mid March and fully tillered ryegrass.

³ Control ratings were made in the spring and were based on a scale of 0 to 100 with 0 =no control and 100 = complete control.

Table 2. Italian Ryegrass Control with Fall or Spring Herbicide Applications in an Experimental Clearfield Wheat Variety (UKREC 2001).

Herbicide Treatments ¹	% Ryegrass Control at Different Timing of Applications ^{2 3}		
	Fall	Spr 1	Spr 2
Beyond 4 oz/A	80	80	53
5 oz/A	90	93	43
6 oz/A	93	100	60
Hoelon 1.67 pt/A	100	----	----
	LSD (0.05) 17		

¹ Crop oil concentrate at 1% v/v was included with Beyond.

² Fall = mid-November approximate 2 leaf ryegrass. Spr 1= mid February and 2-3 tillered ryegrass.

Spr 2 = mid March and fully tillered ryegrass.

³ Control ratings were made in the spring and were based on a scale of 0 to 100 with 0 =no control and 100 = complete control