EVALUATION OF "NEW" HERBICIDE OPTIONS FOR MANAGING ITALIAN RYEGRASS IN WHEAT (UKREC 2005-2006)

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Introduction:

Until recently, Hoelon has been the standard herbicide used for managing Italian ryegrass (also known as annual ryegrass) in wheat. Osprey was approved in the spring of 2004 for ryegrass control in wheat and has become the leading product used to manage this problem weed. In addition to Osprey, there are a number of other 'new' options available for controlling ryegrass in wheat. Those that were evaluated this past season are indicated below:

Axial • Company: Syngenta • Active ingredient: pinoxaden • Chemistry: ACCase inhibitor
Everest • Company: Arysta • Active ingredient: flucarbazone • Chemistry: ALS inhibitor
Finesse Grass & Broadleaf • Company: DuPont • Active ingredients: chlorsulfuron + flucarbazone • Chemistry: ALS inhibitors
Osprey • Company: Bayer • Active ingredient: mesosulfuron • Chemistry: ALS inhibitor
Other herbicides that are relatively new but not evaluated in the 2005-2006 study include: Finesse, Beyond, and Prowl H2O

The objective of this research was to evaluate and compare selected herbicides for crop injury and ryegrass control in wheat.

Methods:

'Pioneer 25R35' was planted using no-tillage practices on October 12, 2005. Glyphosate at 0.75 lb ae/A was applied as a burndown spray ahead planting. Ryegrass was overseeded to ensure a uniform stand for evaluating weed control. The density of ryegrass was estimated to be 6 plants per square foot.

Treatments were applied in a spray volume of 20 GPA on November 30, 2005 with a CO_2 back pack sprayer. Wheat was approximately 4 inches tall with an average of 1 tiller. Ryegrass plants ranged from ½ to 1½ inches tall with 2 leaves to 2 tillers. Crop injury was evaluated January 4 and March 16, 2006. Ryegrass control was evaluated January 4 and May 26, 2006. Wheat was harvested with a plot combine on June 14, 2006.

Results:

Injury in the form of stunted plants was observed at five weeks after application (see table 1). The greatest injury occurred when methylated seed oil was used as an additive with Osprey. However, the level of injury with Osprey was less obvious when

nonionic surfactant was used as an additive. Wheat had outgrown injury by March 16 (15 weeks after application).

Ryegrass control ranged from 88 to 90% on January 4 (5 weeks after application) and did not differ among herbicides. Treatments continued to maintain this level of control with the exception of Everest. Control with Everest was 78% and 80% for 0.5 and 06. oz/A rates, respectively, on May 26.

Summary:

Axial, Finesse Grass & Broadleaf, and Osprey provided equally effective ryegrass control. Early season injury was observed where methylated seed oil was used with Osprey, yet plants outgrew this injury by the following spring.

Additional research is needed to evaluate these herbicides for their ability to control ryegrass and potential to injure wheat under a variety of environmental conditions. Also, the risk of injury to rotational crops such as double cropped soybeans needs to be evaluated, particularly with such products as Finesse Grass & Broadleaf.

Table 1. **Herbicides Evaluated for Italian Ryegrass Control in Wheat** [1] **(UKREC 2005-2006)**

Chemicals	Rate	Wheat Injury (%)		Ryegrass Control (%)		Wheat Yield (Bu/a)
		1/4/06	3/16/06	1/4/06	5/26/06	6/14/06
Axial Adigor	8.2 oz/A 0.6 pt/A	3	0	90	90	108.5
Everest Nonionic Surfactant	0.5 oz/A 0.25%	5	0	88	78	114.9
Everest Nonionic Surfactant	0.6 oz/A 0.25%	3	0	88	80	104.3
Finesse Grass & Broadleaf Nonionic Surfactant	0.75 oz/A 0.25%	3	3	90	93	107.5
Finesse Grass & Broadleaf Nonionic Surfactant	0.9 oz/A 0.25%	8	0	90	91	107.7
Osprey Nonionic Surfactant 28 % UAN	4.75 oz/A 0.5% 2 qt/A	5	0	88	90	110.5
Osprey Methylated Seed Oil	4.75 oz/A 0.5%	13	0	88	90	112.6
Non-treated Check		0	0	0	0	89
LSD (0.05)		7	NS	5	10	12.7

[1] METHODS:

- Pioneer 25R35 planted with no-tillage practices on 10/12/05 at 35viable seed/ft^2.
- Ryegrass density on 10/27/05 was 6 plants / $ft^{2.}$
- Treatments were applied 11/30/05. Wheat 1 tiller, Ryegrass 2 leaf to 3 tillers
- Warrior was applied 11/21/05 and 3/22/06. Tilt was applied 4/25/06.
- Nitrogen was applied at 21 units/A on 2/15/06 and 80 units/A on 3/17/06.