

# ITALIAN RYEGRASS WITH OSPREY IN WHEAT (UKREC 2004-2005)

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## **Introduction:**

Osprey is a relative new herbicide available for managing Italian ryegrass in wheat. It is an ALS inhibitor compared with Hoelon, which is an ACCase inhibitor. This difference in mode of action offers wheat growers a tool for limiting the development of ACCase resistant ryegrass.

The objective of this research was to continue to evaluate Osprey as a postemergence herbicide for controlling Italian ryegrass in wheat. The treatments were designed to compare application timing, additives, and tank mix partners.

## **Methods:**

Treatments are listed in Table 1 along with specific information on the overall management of the study.

A hand-held, CO<sub>2</sub> – powered back pack sprayer was used to apply treatments in a spray volume of 20 gallons per acre. Treatments were arranged in a randomized complete block design with 3 replications.

Italian ryegrass seedheads counts were made June 2 and control was evaluated on June 18, 2005. Wheat was harvested June 20 with a small plot combine.

## **Results:**

Osprey provided 80 to 98% control of Italian ryegrass. Most Osprey treatments provided equal control relative to the standard treatment of Hoelon at 2 pt/A. The only treatment that exceeded Hoelon was the spring application of Osprey combined with Non-ionic surfactant plus liquid nitrogen plus 2,4-D ester.

Although there were no statistical differences due to types of adjuvants, methlated seed oil (MSO) tended to provide less control relative to non-ionic surfactant. Application timing did not have a significant impact on ryegrass control. The use of Harmony Extra, Clarity, or 2,4-D ester as tank mix partners with Osprey did not cause antagonism in ryegrass control.

Although ryegrass control with spring - applied Osprey treatments exceeded 90%, wheat yields were low. Wheat yields for Osprey averaged 63 bu/A for the spring treatments compared with an average of 108.9 bu/A for the fall applications. The delay of spraying Osprey from fall to spring allowed time for the heavy ryegrass density (i.e. 82 plants per ft<sup>2</sup>) to compete with wheat and limited yield.

In order to test the maximum potential of these herbicides to control ryegrass in wheat, additional research is needed on treating plants that have over wintered and are fully tillered.

## **Summary and Conclusions:**

The results of this study support those of earlier field trials. Osprey usually provides equal or better postemergence control of Italian ryegrass than Hoelon. An advantage of Osprey over Hoelon is its ability to be tank mixed with such broadleaf herbicides as Harmony Extra with very little risk of causing antagonism to ryegrass control. However, Osprey provides very little soil-residual activity relative to Hoelon, consequently there are greater risks of new ryegrass seedlings emerging after Osprey application.

Osprey requires an adjuvant system such as methylated seed oil (MSO) or non-ionic surfactant (NIS) plus liquid urea ammonium nitrogen (UAN) fertilizer. Results thus far indicate that ryegrass control has generally been equal with either MSO or NIS + UAN.

Although good to excellent control was observed in the 2004-2005 study, there have been instances in previous studies where over-wintered ryegrass was difficult to control.

<b>Table 1. Italian Ryegrass Control, Seedhead Density, and Wheat Yield (UKREC 2004 - 2005)</b>					
<u>Chemicals</u>	<u>Rate</u>	<u>Timing</u>	<u>Ryegrass</u>		<u>Wheat</u>
			<u>Control (%)</u> 6/18/2005	<u>Seedheads/ft<sup>2</sup></u> 6/6/2005	<u>(Bu/A)</u>
Osprey MSO	4.75 oz/A 1.5 pt/A	Fall Post	80	9.2	98.6
Osprey NIS + UAN	4.5 oz/A 0.5 % + 2 qt/A	Fall Post	90	2.7	119.1
Osprey MSO	4.75 oz/A 1.5 pt/A	Spring Post	95	3.2	62.7
Osprey NIS + UAN	4.5 oz/A 0.5 % + 2 qt/A	Spring Post	93	6.2	55.0
Osprey NIS + UAN Harmony Extra	4.5 oz/A 0.5 % + 2 qt/A 0.5 oz/A	Spring Post	93	6.5	58.9
Osprey NIS + UAN 2,4-D Ester	4.5 oz/A 0.5 % + 2 qt/A 1 pt/A	Spring Post	98	2.2	74.6
Osprey NIS + UAN Clarity	4.5 oz/A 0.5 % + 2 qt/A 4 oz/A	Spring Post	93	4.5	68.6
Hoelon	2 pt/A	Spring Post	80	9.3	69.8
Hoelon Harmony Extra NIS	2 pt/A 0.5 oz/A 0.5 %	Spring Post	70	14.5	40.7
Non-treated Check			0	51.5	28.7
LSD (0.05)			15	11	34.7

MSO=Methylated Seed Oil; NIS= Non-ionic Surfactant; UAN= Urea Ammonium Nitrogen

Application Timing  
 Fall Post: 12/4/04: Wheat 1 tiller & 5" tall, Ryegrass 2 tillers & 6" tall  
 Spring Post: 3/12/05: Wheat 1 tiller & 5" tall, Ryegrass 2 tillers & 6" tall

Planted: Pioneer 25R35 on 10/22/04  
 Nitrogen: 41 units on 2/18/05 and 70 units on 3/30/05  
 Warrior: 3 oz/A on 3/17/05  
 Tilt: 4 oz/A on 5/4/05  
 Wheat stand: 33 plants/ft<sup>2</sup> on 11/5/04  
 Ryegrass stand: 82 plants on 11/5/04