Canarygrass Control in Wheat - 2002

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Abstract

Five herbicides were evaluated for the control of littleseed canarygrass. These herbicides were applied at either the 1-3 leaf stage of the canarygrass or at the 1 leaf to elongating stage of development. All of the herbicides tested except Hoelon, produced excellent control at the early application. Puma, Olympus and the highest rate of F130060 (Aventis) produced good control at the late application. Achieve worked well when applied early but was unacceptable at the late application.

Introduction

Littleseed canarygrass (phalaris minor) became increasingly widespread in 1980's and 90's in Arizona due to lack of an effective herbicide. Achieve (tralkoxydim) was registered in Arizona in 1999 and has been the principal herbicide used to control this weed since that time. Control levels with achieve have ranged from 70 to 90 percent with excellent crop safety. The use of this herbicide has significantly reduced the distribution and severity of canarygrass infestations in Arizona. New herbicides are being developed by some chemical companies that have been found to produce higher and more consistent levels of control of this weed. These include Olympus (formerly Bayer MKH65461), F130060 (Aventis), and Puma (Aventis), which is registered in California. Puma (fenoxaprop) and Achieve (tralkoxydim) work by inhibiting lipid biosynthesis with good crop safety. Olympus and F130060 are sulfonylurea herbicides that work by inhibiting acetolactate synthase (ALS). These ALS inhibitors have had less crop safety in our previous tests. This test was conducted to further evaluate these four herbicides and the old standard, Hoelon, for weed control and crop safety.

Method

This test was conducted at the University of Arizona Yuma Valley Agricultural Center. The soil type at this location is a silty clay loam with less than 1% organic matter. The test was flood irrigated with Colorado River water.

The test consisted of 16 treatments set in a randomized complete block and replicated four times. The treatments were standard rates of Hoelon, Puma, Achieve and Olympus (MKH6561) and three rates of F130060 applied either when the canarygrass was 1-3 leaf or 1 leaf to elongating. This later treatment was made to determine if weed control could be maintained and crop injury reduced. Plot size was 14 x 25 feet and sprayed with a CO_2 backpack sprayer with a 7-foot boom. Spray volume was 20 gallons per acre. The early treatment (1-3 leaf) was applied on 1-14-02 and the later treatment (1 leaf to elongating) was made on 2-8-02. Visual evaluations of weed control and crop phytotoxicity were made on 5-15-02.

Results

The results of this test appear in Table 1. It is apparent from these results that the early (1-3 leaf) applications of Puma, Achieve, Olympus (MKH6561) and the high rate F130060 produced excellent canarygrass control. The late (1 leaf to elongating) application of Olympus also produced excellent control. Very good but slightly lower levels of

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control were achieved with the early application of the middle rate of F130060 and the late applications of PUMA and the late application of the high rate of P130050. Achieve produced excellent control when applied early but was unacceptable when applied late. Puma, on the other hand, produced only slightly lower control when applied late than it did at the early application. Both timings produced 90 to 98 percent control. The same was true for Olympus, which worked very well at both timings. Only the highest rate of F130060 produced good control when applied late. Hoelon was unacceptable at both timings.

Acknowledgements

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Table 1. Weed Control and Crop Safety of 14 Herbicide Treatments for Canarygrass Control in Wheat

No	Herbicide	Rate (A)	Adjuvant	Rate	App Time C.grass	Control (%)[1]	Phyto (%)[1]
						Avg	Avg
1	Hoelon	1.0 lb.ai	-	-	1 leaf to elongating	54 g	1 e
2	Puma	0.11 lb.ai	-	-	"	93 bc	11 ab
3	Achieve	0.25 lb.ai	Supercharge	0.5%	"	61 f	0 e
4	MKH6561	0.057 lb.	Activator 90	.025%	"	95 ab	15 a
5	F130060	9G/HA	107892	18G/HA	"	64 ef	1 e
6	F130060	12G/HA	107892	24G/HA	"	68 e	6 cd
7	F130060	15G/HA	107892	30G/HA	"	90 c	10 bc
8	UTC	-	-	-	-	0 h	0 e
9	Hoelon	1.0 lb.ai	-	-	1-3 leaf	51 g	1 e
10	Puma	0.11 lb.ai	-	-	"	97 a	11 ab
11	Achieve	0.25 lb.ai	Supercharge	0.5%	"	94 abc	0 e
12	MKH6561	0.057 lb.	Activator	0.25%	"	95 abc	10 bc
13	F130060	9G/HA	107892	18G/HA	"	83 d	4 de
14	F130060	12G/HA	107892	24G/HA	"	91 bc	9 bc
15	F130060	15G/HA	107892	30G/HA	"	98 a	10 bc
16	UTC	-	-	-	-	0 h	0 e

[1]Average of 4 replications LSD(0.05)=4.7178 LSD(0.05)=3.9896