

Woolly Cupgrass Management in No-tillage Corn

Micheal D. K. Owen, professor,
James F. Lux, ag specialist,
Damian D. Franzenburg, ag specialist,
Department of Agronomy

Introduction

The purpose of this study was to evaluate various herbicide application strategies including early preplant and preemergence for crop phytotoxicity and weed control in no-tillage corn production.

Materials and Methods

The crop rotation was corn following soybean. The seedbed was left untilled prior to planting. Crop residue was 65 percent at planting. A randomized complete block design with three replications was used. Herbicides were applied in 20 gallons of water per acre. Visual estimates of crop injury and percentage weed control were made during the growing season. These observations are compared with an untreated control and made on a zero to 100 rating scale (0 percent = no control or injury; 100 percent = complete control or crop kill).

Early preplant (EPP) treatments were applied on April 12. No weed growth was evident. 'Garst hybrid 8539 BT/LL/IT' corn was planted on May 11 and preemergence (PRE) treatments followed.

Woolly cupgrass growth stage was one to four leaves and 0.25 to 1.0 in. tall on May 11. Average cupgrass population was 7 plants/ft². Other weed species occurring in this study included: common waterhemp, and velvetleaf. These weeds were cotyledon to five leaves and 0.25 to 2 in. tall. Average common waterhemp and velvetleaf populations were 3 and 1 plant/ft², respectively.

Results and Discussion

Summarized in Table 1 are the data on corn injury and percentage weed control as affected by herbicide treatment and application strategy. On June 8, 0 to 7% corn injury was observed from several combinations of Balance Pro with Atrazine. All EPP, EPP followed by PRE and PRE treatments provided 93 to 99% control of woolly cupgrass when observed on June 8. On July 18, all treatments continued to provide good to excellent control. Balance Pro plus Roundup Ultra applied EPP achieved 90% control on July 18, whereas all other treatments gave 92% or better control. Common waterhemp control was excellent with all treatments when observed on June 8. On July 18, treatments provided 93% control or better, except EPP applied Balance Pro plus Roundup Ultra. All treatments gave excellent velvetleaf control on June 8 and July 18.

Table 1. Evaluation of early preplant and preemergence applied herbicides for woolly cupgrass management in no-tillage corn.

Treatment	Rate Product/A	Appl. time	Injury	Wocu ^a	Wocu	Cowh	Cowh	Vele	Vele
			6/8 --- (%) ---	6/8 -----	7/18 -----	6/8 -----	7/18 -----	6/8 -----	7/18 -----
Control	-	-	0	0	0	0	0	0	0
Balance Pro 4 SC+	4.5 oz+	EPP	0	99	96	99	96	99	99
Roundup Ultra 4SL	0.75 qt								
Balance Pro 4 SC+	4.5 oz+	EPP	0	98	96	99	98	99	99
Atrazine 90DF WG+	1.67 lb+								
Roundup Ultra 4SL	0.75 qt								
Balance Pro 4 SC+	3.75 oz+	EPP+	3	99	95	99	99	99	99
(Balance Pro 4 SC+	(0.75 oz+	(PRE)							
Atrazine 90DF WG+	1.67 lb+								
Roundup Ultra 4SL)	0.75 qt)								
Balance Pro 4 SC+	3.0 oz+	EPP+	0	99	98	99	98	99	99
(Balance Pro 4 SC+	(1.5 oz+	(PRE)							
Atrazine 90DF WG+	1.67 lb+								
Roundup Ultra 4SL)	0.75 qt)								
Balance Pro 4 SC+	2.25 oz+	EPP+	7	99	98	99	98	99	99
(Balance Pro 4 SC+	(2.25 oz+	(PRE)							
Atrazine 90DF WG+	1.67 lb+								
Roundup Ultra 4SL)	0.75 qt)								
Balance Pro 4 SC+	3.75 oz+	EPP	0	93	90	99	90	99	99
Roundup Ultra 4SL	0.75 qt								
Balance Pro 4 SC+	3.75 oz+	EPP	0	96	92	99	93	99	99
Atrazine 90DF WG+	1.67 lb+								
Roundup Ultra 4SL	0.75 qt								
Balance Pro 4 SC+	3.0 oz+	EPP+	0	98	95	99	96	99	99
(Balance Pro 4 SC+	(0.75 oz+	(PRE)							
Atrazine 90DF WG+	1.67 lb+								
Roundup Ultra 4SL)	0.75 qt)								
Balance Pro 4 SC+	1.9 oz+	EPP+	3	99	96	99	98	99	99
(Balance Pro 4 SC+	(1.9 oz+	(PRE)							
Atrazine 90DF WG+	1.67 lb+								
Roundup Ultra 4SL)	0.75 qt)								
Balance Pro 4 SC+	3.0 oz+	PRE	7	98	95	99	98	99	99
Atrazine 90DF WG+	1.67 lb+								
Roundup Ultra 4SL	0.75 qt								
Balance Pro 4 SC+	3.75 oz+	EPP	0	98	95	99	96	99	99
Atrazine 90DF WG+	1.1 lb+								
Surpass 6.4EC+	1.25 pt+								
Roundup Ultra 4SL	0.75 qt								
Balance Pro 4 SC+	3.75 oz+	EPP	0	99	93	99	96	99	99
Fultime 4SC+	2.0 qt+								
Roundup Ultra 4SL	0.75 qt								
Balance Pro 4 SC+	3.0 oz+	PRE	5	96	93	99	96	99	99
Fultime 4SC+	2.0 qt+								
Roundup Ultra 4SL	0.75 qt								
LSD (0.05)			9	3	4	0	5	0	0

^a Wocu = woolly cupgrass, Cowh = common waterhemp, Vele = velvetleaf.