Reduced Rates of Herbicides in Normal Soybeans

Jeff Stachler, AGNR Extension Educator- Auglaize County
Dr. Mark Loux, OSU Professor- Weed Management

Objective

To determine if reduced rates of herbicides can provide adequate weed control and show no yield loss in no-tillage soybean utilizing pre-emergence and post-emergence herbicide applications.

Background

Crop Year:	1997	Soil Test:	N/A
Cooperator:	Tim Warner	Fertilizer Applied:	N/A
County/Town:	Darke/ Greenville	Herbicide:	See Methods
Drainage:	N/A	Variety:	Becks 299
Major Soil Type:	Brookston Silty Clay Loam	Planting Rate:	210,000 seeds/A
Previous Crop:	Corn	Planting Date:	April 29, 1997
Tillage:	None	Harvest Date:	September 24, 1997

Materials and Methods

The plot size for this study was 20 feet wide and 300 feet in length. Each treatment was replicated three times. 2,4-D ester at 1.0 pt/A plus Prime Oil (COC) was added to treatments 1-7 and applied alone to treatment 8 to control existing weeds seven days prior to planting. The 1X Canopy rate was 6.0 oz/A and 1X Squadron rate was 3.0 pt/A. The post-emergence application of Basagran + Poast HC + Prime Oil + 28% Nitrogen at the 1X rate was 2.0 pt/A + 10.0 floz/A + 0.5%v/v + 2.0%v/v and applied as listed in the table.

Results

Treatment	Product and Rate[1]	Treatment Timing		Weed Control (% on July 24, 1997)	Soybean Yield	Treatment Cost[2]
		Height (in.)	DAP	An. Gr.	(bu/A)	($/A)
1	Canopy (EPP) 1/2X		-7	86	62	$12.06
2	Canopy (EPP) 1/2X (POST) 1/4X	1.25	-7 52	93	61	$22.09
3	Canopy (EPP) 1/2X (POST) 1/2X	3.0	-7 56	98	61	$29.32
4	Squadron (EPP) 1/2X		-7	83	62	$17.00
5	Squadron (EPP) 1/2X (POST) 1/4X	1.25	-7 52	95	61	$27.03
6	Squadron (EPP) 1/2X (POST) 1/2X	3.0	-7 56	98	63	$34.26
7	Squadron (EPP) 1X		-7	83	61	$29.16
8	Roundup (POST) 1X	8.0	65	95	63	$37.56
	LSD (0.05%)			7	NS	

1. Abbreviations: Height = annual grass height, DAP = days after planting, An. Gr. = annual grass (giant foxtail and barnyardgrass), bu/A = bushels per acre, EPP = early pre-plant application, POST = post-emergence application, LSD = least significant difference, NS = no significant difference

2 Treatment cost = cost of all herbicides and additives (including burndown) and application cost at $2.00/A/application

Summary and Notes

The annual grass pressure was light to moderate and the annual broadleaf pressure was non-existent. Canada thistle was present, which is why Basagran was used, but the thistle population was not uniform enough to rate. Treatments 1, 4, and 7 provided less than 87% control of annual grass, but yield was not significantly reduced.

For additional information, contact: Jeff Stachler and Dr. Mark Loux
The Ohio State University
stachler.1@osu.edu or loux.1@osu.edu