Texas Agricultural Extension Service
The Texas A&M University System

Control of Volunteer Annual Sunflower

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Summary
A study was conducted in the spring of 2000 to evaluate various postemergence herbicides for controlling volunteer annual sunflower (*Helianthus annuus*). Excellent control was achieved with applications of Liberty @ 20 oz/a and Roundup Ultra @ 24 oz/a. Herbicides such as Peak, Exceed, Basis, Lightning, and Permit provided fair control. The least amount of control was achieved with atrazine, Aim, and Accent.

Introduction and Objective
With the increase in natural gas and nitrogen fertilizer prices, producers are seeking alternative crops to corn. Annual sunflowers are a viable option in the Texas panhandle which require less water and less nitrogen to produce. As many corn fields will inevitably be converted to sunflowers and then back again to corn in the future, annual sunflowers could become a weed problem. This study was conducted to evaluate various postemergence herbicides, most which are labeled in field corn, for control of volunteer annual sunflowers.

Materials and Methods

Design:	RCBD - 4 replications
Plot Size:	15' x 25'
Application Date:	April 13, 2000
Weed Size:	2 leaf
Weed Density:	10/ft^2
Temperature (F):	78
Spray Volume:	10 gpa
Sprayer:	CO_2 charged, tractor-mounted

Results
See table 1. for ratings information.

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Table 1. Percent Volunteer Sunflower Control.

Treatment	Product Rate / Ac	% Control Ratings[1)]	
		2 WAT[2)]	4 WAT
atrazine + COC	1.5 qt + 1.0 qt	56	41
Accent + NIS	0.67 oz + 0.25 % v/v	43	39
Aim + NIS	0.33 oz + 0.25 % v/v	46	34
Basis + NIS	0.33 oz + 0.25 % v/v	70	70
Exceed + COC	1.0 oz + 1 qt	80	84
Distinct + NIS	5 oz + 0.25 % v/v	51	61
Clarity + NIS	1 pt + 0.25 % v/v	66	66
Hornet + NIS	2.4 oz + 0.25 % v/v	65	68
Liberty + Amm. Sulf. + NIS	20 oz + 17 lb/100 gal + 0.25 % v/v	93	91
Lightning + Amm. Sulf. + NIS	1.28 oz + 17 lb/100 gal + 0.25 % v/v	79	75
Permit + NIS	0.67 oz + 0.25 % v/v	79	89
Roundup Ultra	24 oz	94	91
2,4-D LV6	0.33 pt	60	56
Peak + NIS	1 oz + 0.25 % v/v	80	89

[1]Ratings are based on a scale of 0 to 100% with 0 = no control and 100 = complete control.

[2]WAT = weeks after treatment.

Discussion

At the 2 WAT rating control ranged from 43% to over 90%. Roundup Ultra and Liberty provided the best control with 94 and 93 %, respectively. The least amount of control was achieved with Accent and Aim. Most herbicides burned back the true-leaf growth but did not completely kill the cotyledons. At 4 WAT ratings ranged from 34 to 91% control as many of the treatments began to allow re-growth. Roundup Ultra and Liberty still had the highest level of control at this rating while Accent and Aim were still the lowest. To completely control the volunteer sunflowers in this study, a second application or tillage would have been required for most treatments. According to this study, the most effective method of controlling volunteer sunflowers would be an application of Roundup Ultra or Liberty. In order to make these treatments in field corn, a herbicide resistant variety will need to be planted. Otherwise, more than one application of another postemergence treatment may be required.