

## WEED CONTROL IN GARBANZO BEANS

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Garbanzo beans are a fairly new crop to central Oregon. There are several preemergence herbicides that are registered for use on garbanzo beans, but efficacy of these herbicides in central Oregon is not known. A trial was conducted to compare currently registered herbicides alone and in combination. A few treatments were included to evaluate crop safety from postemergence applications that are not registered.

Garbanzo bean injury was not severe from any single herbicide. Herbicide combinations that included dimethenamid-P or imazethapyr tended to be more injurious, especially these two together. Garbanzo bean injury was high from most of the postemergence applications.

Control of prostrate pigweed and common lambsquarters was 96% or greater with imazethapyr, sulfentrazone, dimethenamid-P, pendimethalin and oxyfluorfen applied alone. The only stand alone treatments that controlled tumble mustard were imazethapyr and oxyfluorfen.

imazethapyr = Pursuit 70%  
sulfentrazone = Spartan 75%  
dimethenamid-P = Outlook 6 lb/gal  
pendimethalin = Prowl H<sub>2</sub>O  
oxyfluorfen = Goal 2 lb/gal  
ethalfluralin = Sonalan 3 lb/gal  
metribuzin = Sencor 75%

NIS = R-11 non-ionic surfactant

Oregon State University

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COARC, Dogwood Lane, Madras, Jefferson County, Oregon, 2005

**Crop Description**

**Crop 1:** CIEAR Cicer arietinum Garbanzo bean  
**Variety:** kabuli type  
**BBCH Scale:** BDIC **Planting Date:** 8/Apr/05  
**Planting Method:** Drilled  
**Depth, Unit:** 0.5 IN

**Pest Description**

**Pest 1 Type:** W **Code:** AMABL *Amaranthus blitoides*  
**Common Name:** prostrate pigweed

**Pest 2 Type:** W **Code:** CHEAL *Chenopodium album*  
**Common Name:** common lambsquarters

**Pest 3 Type:** W **Code:** SSYAL *Sisymbrium altissimum*  
**Common Name:** tumble mustard

**Pest 4 Type:** W **Code:** TRZAW *Triticum aestivum* (winter)  
**Common Name:** winter wheat

**Site and Design**

**Plot Width, Unit:** 8 FT  
**Plot Length, Unit:** 25 FT  
**Replications:** 3 **Study Design:** Randomized Complete Block

**Soil Description**

**% OM:** 1.4 **Texture:** sandy loam  
**pH:** 6.4 **Soil Name:** Madras

**Application Description**

	<b>A</b>	<b>B</b>
<b>Application Date:</b>	14/Apr/05	23/May/05
<b>Time of Day:</b>	11:00 AM	12:15 PM
<b>Application Method:</b>	spray	spray
<b>Application Timing:</b>	PRE	POST
<b>Application Placement:</b>	broadcast	broadcast
<b>Applied By:</b>	RA, CC	RA
<b>Air Temperature, Unit:</b>	58 F	68 F
<b>% Relative Humidity:</b>	32	19
<b>Wind Velocity, Unit:</b>	5 MPH	4 MPH
<b>Dew Presence (Y/N):</b>	N	N
<b>Soil Temperature, Unit:</b>	56 F	65 F
<b>Soil Moisture:</b>	dry surf	dry surf
<b>% Cloud Cover:</b>	10	0

**Crop Stage At Each Application**

	<b>A</b>	<b>B</b>
<b>Crop 1 Code, BBCH Scale:</b>	CIEAR BDIC	CIEAR BDIC
<b>Stage Scale Used:</b>	DESC	DESC
<b>Stage Majority, Percent:</b>	PRE	
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		2 5

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**Pest Stage At Each Application**

	<b>A</b>	<b>B</b>
<b>Pest 1 Code, Disc., Scale:</b>	AMABL W	AMABL W
<b>Stage Majority, Percent:</b>	PRE	
<b>Stage Minimum, Percent:</b>		2 LF
<b>Stage Maximum, Percent:</b>		4 LF
<b>Diameter, Unit:</b>		2 IN
<b>Pest 2 Code, Disc., Scale:</b>	CHEAL W	CHEAL W
<b>Stage Majority, Percent:</b>	PRE	
<b>Stage Minimum, Percent:</b>		2 LF
<b>Stage Maximum, Percent:</b>		8 LF
<b>Height, Unit:</b>		1.5 IN
<b>Pest 3 Code, Disc., Scale:</b>	SSYAL W	SSYAL W
<b>Stage Majority, Percent:</b>	PRE	
<b>Diameter, Unit:</b>		4 IN
<b>Pest 4 Code, Disc., Scale:</b>	TRZAW W	TRZAW W
<b>Stage Majority, Percent:</b>	PRE	
<b>Stage Minimum, Percent:</b>		2 TILR
<b>Stage Maximum, Percent:</b>		4 TILR

**Application Equipment**

	<b>A</b>	<b>B</b>
<b>Appl. Equipment:</b>	unicycle	unicycle
<b>Operating Pressure:</b>	20	20
<b>Pressure Unit:</b>	PSI	PSI
<b>Nozzle Type:</b>	flat fan	flat fan
<b>Nozzle Size:</b>	XR 8003	XR 8003
<b>Nozzle Spacing, Unit:</b>	18 IN	18 IN
<b>Boom Length, Unit:</b>	90 IN	90 IN
<b>Boom Height, Unit:</b>	18 IN	20 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH
<b>Carrier:</b>	water	water
<b>Spray Volume:</b>	20	20
<b>Volume Unit:</b>	GPA	GPA
<b>Propellant:</b>	comp. air	comp. air

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Pest Code						AMABL	CHEAL	SSYL	TRZAW			
Crop Code						CIEAR				CIEAR	CIEAR	
Rating Date						23/May/05	23/May/05	23/May/05	23/May/05	23/May/05	16/Jun/05	19/Jul/05
Rating Data Type						Injury	Control	Control	Control	Control	Injury	Stand count
Rating Unit						%	%	%	%	%	%	plant/yd
Trt-Eval Interval						39 DA-A	39 DA-A	39 DA-A	39 DA-A	39 DA-A	63 DA-A	96 DA-A
Trt No.	Treatment Name	Rate	Rate Unit	Growth Stage	Appl Code	1	2	3	4	5	6	7
1	check	0	lb a/a			0.0	0.0	0.0	0.0	0.0	0.0	4.5
2	imazethapyr	0.047	lb ae/a	PRE	A	15.0	96.3	98.3	100.0	0.0	8.3	4.3
3	sulfentrazone	0.141	lb a/a	PRE	A	10.0	100.0	100.0	40.0	0.0	0.0	5.2
4	dimethenamid-P	0.75	lb a/a	PRE	A	26.7	99.7	100.0	66.7	0.0	15.0	3.8
5	pendimethalin	0.95	lb a/a	PRE	A	10.0	100.0	100.0	83.3	0.0	6.7	5.7
6	oxyfluorfen	0.25	lb a/a	PRE	A	16.7	100.0	100.0	100.0	0.0	15.0	5.0
7	ethalfluralin	0.75	lb a/a	PRE	A	6.7	36.7	36.7	10.0	0.0	0.0	4.5
8	imazethapyr	0.047	lb ae/a	PRE	A	30.0	100.0	100.0	100.0	16.7	3.3	3.5
8	sulfentrazone	0.141	lb a/a	PRE	A							
9	imazethapyr	0.047	lb ae/a	PRE	A	25.0	100.0	100.0	96.7	0.0	56.7	4.3
9	dimethenamid-P	0.75	lb a/a	PRE	A							
10	pendimethalin	0.95	lb a/a	PRE	A	20.0	100.0	100.0	100.0	0.0	0.0	3.7
10	oxyfluorfen	0.25	lb a/a	PRE	A							
11	pendimethalin	0.95	lb a/a	PRE	A	0.0	100.0	100.0	53.3	0.0	13.3	4.0
11	oxyfluorfen	0.25	lb a/a	POST	B							
11	NIS	0.25	% v/v		B							
12	ethalfluralin	0.75	lb a/a	PRE	A	2.5	100.0	100.0	43.3	16.7	0.0	4.3
12	sulfentrazone	0.141	lb a/a	PRE	A							
13	pendimethalin	0.95	lb a/a	PRE	A	25.0	100.0	99.7	99.0	16.7	6.7	4.0
13	dimethenamid-P	0.75	lb a/a	PRE	A							
14	sulfentrazone	0.141	lb a/a	PRE	A	0.0	100.0	100.0	73.3	0.0	6.7	2.7
14	sulfentrazone	0.141	lb a/a	POST	B							
14	NIS	0.25	% v/v		B							
15	dimethenamid-P	0.75	lb a/a	PRE	A	30.0	100.0	100.0	100.0	96.7	55.0	2.7
15	metribuzin	0.75	lb a/a	PRE	A							
16	oxyfluorfen	0.25	lb a/a	POST	B						45.0	3.8
16	NIS	0.25	% v/v		B							
17	sulfentrazone	0.141	lb a/a	POST	B						20.0	3.3
17	NIS	0.25	% v/v		B							
18	oxyfluorfen	0.25	lb a/a	POST	B						60.0	4.0
18	sulfentrazone	0.141	lb a/a	POST	B							
18	NIS	0.25	% v/v		B							

LSD (P=.05) --- --- --- --- --- --- NS  
Treatment Prob(F) 0.0595 0.0001 0.0001 0.0001 0.0001 0.0001 0.3474