

Phoenix and Valor

Evaluation of Phoenix and Valor weed management systems in soybean at Rochester, MN in 2002. Breitenbach, Fritz R., Lisa M. Behnken, and Kristal L. Schaufler. The objective of this trial was to evaluate the performance of Phoenix and Valor in combination with other herbicides for weed control in soybean in southeastern Minnesota. The research site was a Lawler loam soil, containing 2.3% organic matter, pH of 6.2, and soil test P and K levels of 35 and 132 ppm, respectively. The previous crop was field corn. In the fall of 2001, the area was fertilized with 200 lb/A Pel-lime and 200 lb/A potash, disked twice and chisel plowed once. Spring tillage consisted of one pass with a field cultivator. The soybean variety, Pioneer 92B05, was planted on May 15, 2002, at a 1-inch depth in 30-inch rows at a population of 160,000 seeds/A. A randomized complete block design with four replications was used. Preplant incorporated (PPI), preemergence (PRE) and postemergence (POST) treatments were applied with a tractor-mounted sprayer, delivering 20 gallons per acre at 32 psi using TurboTee 11002 nozzles. Evaluations of the plot were taken on June 11 and 25 and July 2 and 11. Application dates, environmental conditions, crop and weed stages are listed below.

Date	May 14	May 15	June 14
Treatment	PPI	PRE	POST
Temperature (F)			
air temp	60	74	65
soil temp. °F	---	---	---
Relative Humidity (%)	48	43	65
Wind (mph)	3	20	16
Soil Moisture	adequate	adequate	adequate
Corn			
Stage	---	---	V2
height (inch)	---	---	4.5
Giant ragweed			
weed density/ft ²	---	---	3.63
height (inch)	---	---	5.5
Common lambsquarter			
weed density/ft ²	---	---	8
height (inch)	---	---	2
Common waterhemp			
weed density/ft ²	---	---	9.75
height (inch)	---	---	1.5
Giant foxtail			
weed density/ft ²	---	---	20.4
height (inch)	---	---	2.5
Rainfall after application (inch)			
week 1	0.05	0.05	2.66
week 2	0.40	0.40	0.66
week 3	3.64	3.64	0.0

Results:

1. Giant Ragweed control:

- a. Eight treatments provided between (88-99%) giant ragweed control. FirstRate was a component of six of these treatments. The other two were PRE Python followed by POST Phoenix + Raptor, and PRE Python followed by POST Phoenix + Pursuit + Select.
- b. Phoenix, when tank mixed with FirstRate, Raptor, or Pursuit resulted in good giant ragweed control, (90-99%). Phoenix tank mixed with Synchrony, or Harmony resulted in unacceptable giant ragweed control, 60 and 75%, respectively.
- c. PRE Python plus either POST Raptor or Pursuit, and PRE Prowl followed by POST Raptor tank mixed with Ultra Blazer resulted in unacceptable (44-78%) giant ragweed control.

2. Common Lambsquarters control:

- a. Python was used as a planned foundation treatment to aide in lambsquarters control. Lambsquarters control with Python PRE was 70%.
- b. Very good lambsquarters control (91%) was achieved with Prowl PPI followed by POST Raptor + Ultra Blazer, and Prowl + Valor PPI followed by POST FirstRate.
- c. Python PRE followed by POST Raptor, or Phoenix + Raptor, or Phoenix + Harmony + Select, also resulted in very good lambsquarters control (91-98%) .
- d. Valor PRE followed by POST FirstRate + Select, Pursuit + Select, Phoenix + FirstRate + Select, Cobra + FirstRate + Select resulted in 85%,90%, 80%,82% control, respectively.

3. Common Waterhemp control:

All herbicide treatments, except. three, provided control between 95 – 99%. The foundation Python treatment, PRE Python followed by POST Raptor, and PRE Python followed by POST Pursuit all resulted in only 40% common waterhemp control.

4. Giant Foxtail control:

- a. Six of the treatments that included Select gave very good giant foxtail control (89-91%).
- b. Two tank mixes that included Select + Synchrony and Select + Harmony resulted in 83 and 76% control respectively.
- c. Poor control (50%) occurred with the tank mix of Select, Phoenix, and Pursuit.
- d. Giant foxtail control was reduced (64%) with the Raptor + Phoenix tank mix.

5. Crop Response:

- a. Harmony caused significant crop response, (46% injury). Symptoms were primarily stunted plants and death of the growing point.
- b. Phoenix and Cobra exhibited similar crop response with injury ranging from 15 – 23%.
- c. Ultra Blazer caused 10% injury, and Raptor caused only 3% crop response.

6. Crop Yield:

- a. Yield response was closely correlated with giant ragweed and giant foxtail control.
- b. Crop injury from Harmony appears to have decreased crop yield when compared to Synchrony treatments.
- c. The top treatments in overall weed control and yield were those with PRE applications of Valor and/or Python followed by POST applications of FirstRate and Select, with or without Cobra or Phoenix. These treatments gave excellent control of giant ragweed (90-99%), common waterhemp (98-99%) and giant foxtail (89-90%), and good control of common lambsquarters (70-85%).

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Table. Performance of Phoenix and Valor weed management systems in soybeans on July 11 at Rochester, MN in 2002 (Breitenbach, Behnken, and Schaufler)

<i>Treatment</i>	<i>Rate</i>	<i>Injury Jun-24-02</i>	<i>Giant ragweed control</i>	<i>Common lambsquarter control</i>	<i>Common waterhemp control</i>	<i>Giant foxtail control</i>	<i>Soybean yield</i>
	(rate/A)	(%)	(%)	(%)	(%)	(%)	(bu/A)
<u>PPI/POST</u>							
Prowl+Raptor+UltraBlazer+ NIS+AMS	1.56pt/ 4oz + 12oz + 0.25% + 3lb	10	44	91	98	83	16
Prowl+Valor/ FirstRate+COC+ AMS	1.56pt + 2oz/ 0.3oz + 1pt + 2lb	0	88	91	97	85	34
<u>PRE</u>							
Python	0.67oz	0	0	70	40	0	10
<u>PPE/POST</u>							
Python/ Phoenix + FirstRate + Select + NIS + AMS	0.67oz/ 10oz + 0.3oz + 8oz + 0.125% + 2lb	20	98	70	99	89	36
Python/ Phoenix+ Raptor + NIS + AMS	0.67oz/ 10oz + 5oz + 0.125% + 2lb	22	92	92	99	64	27
Python/ Phoenix + Synchrony + Select + NIS + AMS	0.67oz/ 10oz + 0.25oz + 8oz + 0.125% + 2 lb	22	60	81	99	83	24
Python/ Phoenix + Pursuit + Select + NIS + AMS	0.67oz/ 10oz + 1.44oz + 0.125% + 2 lb	19	90	81	95	50	25
Python/ Phoenix + HarmonyGT + Select + NIS + AMS	0.67oz/ 10oz + 0.42oz + 8oz + 0.125% + 2lb	46	75	98	99	76	16
Valor/ FirstRate + Select + COC + AMS	2.5oz/ 0.3oz + 6oz + 1pt + 2lb	0	98	85	98	90	40
Valor/ Pursuit + Select + COC + AMS	2.5oz/ 1.44oz + 8oz + 1pt + 2lb	0	53	90	96	90	29
Valor/ Phoenix + FirstRate + Select + NIS + AMS	2.5oz/ 8oz + 0.3oz + 8oz + 0.125% + 2lb	15	99	80	99	90	39
Valor/ FirstRate + Cobra + Select + COC + AMS	2.5oz/ 0.3oz + 6oz+ 8oz + 1pt + 2lb	23	99	82	99	89	39
Python/ Raptor + NIS + AMS	0.67oz/ 5oz + 0.125% + 2lb	3	78	95	40	79	24
Python/ Pursuit + NIS + AMS	0.67oz/ 1.44oz + 0.125% + 2lb	0	65	87	40	70	21
Valor+Python/ FirstRate+ Select+COC+AMS	1.5oz + 0.67oz/ 0.3oz + 6oz + 1pt + 2lb	0	90	84	99	91	43
Untreated		0	0	0	0	0	8
	LSD (0.10)	5	13	7	3	8	8