

Effect of Time of Weed Removal on Soybean Yield

(multiple locations)

One pass or two? What would a PRE do?

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Weed Emergence Patterns and the Effect of Time of Weed Removal Soybean Yield

- Different weeds emerge at different times during the growing season
- If left uncontrolled, weeds emerging before or with the crop are more competitive than weeds that emerge after crop emergence
- Weed effects on yield will depend upon:
 - Weed species
 - Weed density
 - Environmental conditions
 - Duration of weed/crop competitive period

Question: What effect does time of weed removal have on soybean yield?

Weed Emergence Patterns and the Effect of Time of Weed Removal Soybean Yield

- In 2004, research compared 5 glyphosate timings (1", 3", 5", 7" and 9" weed heights), with and without a ½-rate of a PRE herbicide on crop yield and economic returns
- Studies were conducted six locations for soybean (Lamberton, Morris, Rochester, Waseca, Luvverne, and Potsdam)

Major weeds in soybean at each site:

Lamberton: Yellow foxtail, Common lambsquarters, Redroot pigweed, Wild buckwheat

Morris: Green foxtail, Common lambsquarters, Powell amaranth, Wild mustard

Rochester: Giant foxtail, Giant ragweed, Common waterhemp, Common lambsquarters

Waseca: Giant foxtail, Common ragweed, Common waterhemp, Velvetleaf, Redroot pigweed,

Luverne: Green foxtail, Common lambsquarters, Powell amaranth

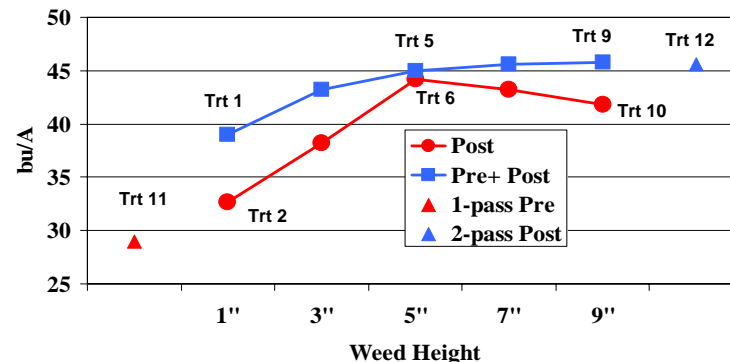
Potsdam: Giant foxtail, Giant ragweed, Common lambsquarters, Velvetleaf

Trial Treatments and Timing

Trt #	Description	Timing
1	Boundary / Touchdown Total + AMS	Pre / 1 "weeds
2	Touchdown Total + AMS	1" weeds
3	Boundary / Touchdown Total + AMS	Pre / 3 "weeds
4	Touchdown Total + AMS	3" weeds
5	Boundary / Touchdown Total + AMS	Pre / 5 "weeds
6	Touchdown Total + AMS	5" weeds
7	Boundary / Touchdown Total + AMS	Pre / 7 "weeds
8	Touchdown Total + AMS	7" weeds
9	Boundary / Touchdown Total + AMS	Pre / 9 "weeds
10	Touchdown Total + AMS	9" weeds
11	Boundary	Pre
12	Touchdown Total + AMS / Touchdown Total + AMS	3" weeds / 2-4" regrowth

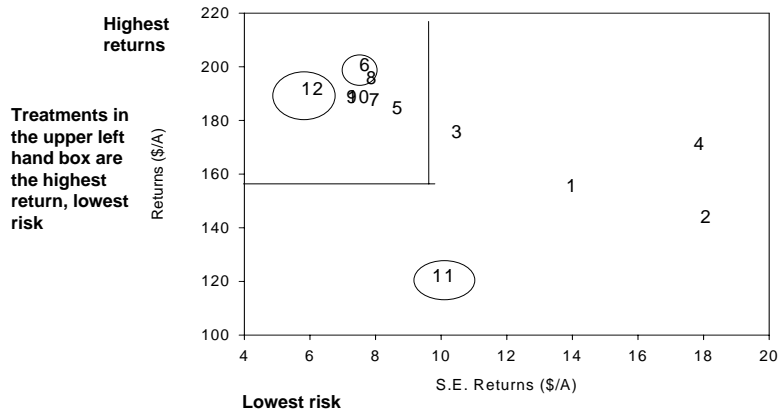
Boundary at 1.25 pt/A
Touchdown Total at 24 oz/A + AMS at 2.5 lb/A

Glyphosate Timing and Soybean Yield Across Locations, 2004



Trt 5 – Boundary (1.5 pt./A) / Touchdown Total (24 oz/A) + AMS at 5 inch weeds
 Trt 6 – Touchdown Total (24 oz/A) + AMS at 5 inch weeds
 Trt 11 – Boundary PRE
 Trt 12 – Touchdown Total + AMS / Touchdown Total + AMS at 3"/ 2-4" regrowth

Mean returns vs. standard error of mean returns for soybean treatments across locations, 2004



Trt 5 – Boundary (1.5 pt./A) / Touchdown Total (24 oz/A) + AMS at 5 inch weeds
 Trt 6 – Touchdown Total (24 oz/A) + AMS at 5 inch weeds
 Trt 11 – Boundary PRE
 Trt 12 – Touchdown Total + AMS / Touchdown Total + AMS at 3"/ 2-4" regrowth

2004 Summary over All Locations

Under Cool & Wet Conditions:

Soybean

One-pass glyphosate (5 inch weeds) could maximize yield and return. (Treatment 6)

The application of glyphosate too early (less than 5 inch weeds) reduced crop yield and economic return.

PRE/POST applications (5 inch weeds or larger) provided good economic returns.

Two pass glyphosate system is very effective and risk efficient.