

High vs. Low Soybean Populations

Dan Foster

Private Industry Cooperator: Steve Mills

OBJECTIVE: To determine and document the profitability of high versus low beginning soybean populations.

HIGH POPULATION

Treatment:

Herbicide: 1992-3 ounces Pursuit Plus and spot spray of Roundup

1993-4 ounces Pursuit Plus, 3.2 ounces Roundup and .5 pint 2,4-D

1994-1 .5 pint Command, 1 pint Roundup, 5 ounces Canopy, 2.6 pounds Ammonium Sulfate and 4.7 ounces Surfactant

Drill: 1993— 88 pounds/acre
1994— 78 pounds/acre

Rogue: 1993 only

Harvest

Comparative cost (per acre)

	<u>1992</u>	<u>1993</u>	<u>1994</u>
Seed	\$15.50	\$15.84	\$14.04
Total	<u>\$15.50</u>	<u>\$15.84</u>	<u>\$14.04</u>

LOW POPULATION

Treatment:

Herbicide: 1992-3 ounces Pursuit Plus and spot spray of Roundup

1993-4 ounces Pursuit Plus, 3.2 ounces Roundup and .5 pint 2,4-D

1994-1.5 pint Command, 1 pint Roundup, 5 ounces Canopy, 2.6 pounds Ammonium Sulfate and 4.7 ounces Surfactant

Drill: 1993— 58 pounds/acre
1994— 52 pounds/acre

Rogue: 1993 only

Harvest

Comparative cost (per acre)

	<u>1992</u>	<u>1993</u>	<u>1994</u>
Seed	\$10.30	\$10.44	\$9.36
Total	<u>\$10.30</u>	<u>\$10.44</u>	<u>\$9.36</u>

High vs. Low Soybean Populations, Dan Foster

Page 2

VARIABLE	1992 SOYBEANS	1 9 9 3 SOYBEANS	1994 SOYBEANS
Final population (seeds/acre)			
High Population	237,000 ***	178,700 **	281,300 ***
Low Population	171,000	126,800	162,800
Plant height			
High Population	29.4" ***	26.3"	N/A
Low Population	25.8"	24.4"	N/A
Pod height			
High Population	8.2" **	6.3"	N/A
Low Population	7.3"	6.0"	N/A
Moisture (%)			
High Population	12.4	11.6	10.5
Low Population	12.3	11.4	10.4
Test weight (pounds/bushel)			
High Population	56.5	58.1	47.7
Low Population	56.6	58.2	48.6
Yield (13 %) (bushels/acre)			
High Population	49	45 **	56
	(3 Yr. Avg. = 50.0)		
Low Population	48	44	56
	(3 Yr. Avg. = 49.0)		

** significantly different at 95% confidence level

*** significantly different at 99% confidence level

summary: The high population yield has been significantly higher than the low population yield in one out of three years. Seed expenses have been approximately \$5.00/acre higher for the high population treatment.