

SOYBEAN PLANT POPULATION TRIAL

Howard Book, Cooperator (2009)
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SUMMARY:

Delta Pine/Asgrow 5335 soybeans planted on April 1, 2009 at three different seeding rates (80,000, 125,000 and 170,000 seeds per acre) on 30 inch rows showed no or minimal difference in yield when planted in no-till or strip-till farming systems. Additional fertility levels (nitrogen, phosphorus and/or sulfur) on the strip-till probably allowed enhancement of the yield slightly with higher population levels. Minimal yield differences may have been due to very dry growing conditions. There is also difficulty in establishing sound data from unreplicated trials.

OBJECTIVE:

To determine the optimum soybean plant population in strip-till and no-till farming systems with different fertility levels.

MATERIALS and METHODS:

Delta Pine/Asgrow 5335 soybeans were planted at three different rates on April 1, 2009. Seeding rates were set at 80,000, 125,000 and 170,000 seeds per acre planted on 30 inch rows with a White 6800 16 row planter. Each seeding rate of 32 row plots was planted twice, once on no-till and once on strip-till farmed land. The soybean seed was inoculated commercially with Helena Optimizer inoculants prior to planting.

One qt/ac of Boundary herbicide was applied pre-emerge plus the crop was sprayed twice during the growing season with 24 oz/ac of Roundup.

Fertility applied was different on the two tests with the following nutrients applied:

No-till: 5-23-53

Strip-till: 22-45-53-6s

RESULTS and DISCUSSIONS:

Growth of the soybeans was good as of June but being dryland farmed and minimal rainfall for the season, the yield was fair but limited by lack of rainfall. Only about 7 inches of rain was received from October, 2008 through the end of the major growing season May, 2009.

There was no difference in the yield of the various soybean plant populations on the no-till soybeans (at a lower fertility rate applied). There was minimal yield difference in the soybean plant populations on the strip-till (higher fertility rate) plots which showed up as a 2 bu/ac increase for the higher plant populations. Although of minimal significance, the highest seed size was noted to be on the lowest plant population in either strip-till or no-till. See Table 1 for

final results.

Definitely the extremely dry conditions minimized the plant growth and yield.

ACKNOWLEDGMENTS:

Appreciation is expressed to Howard Book for establishing this demonstration, to Stephen Moreno for harvesting it and to Stephen Biles and his scouts for evaluating seed size.

DISCLAIMER CLAUSE:

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1. Soybeans plant population on strip-till and no-till. Howard Book, Cooperator, Victoria County, TX 2009.

Seeding Rate Seeds/A	Treatment	Fertility	% Moisture	Bushel Weight	Seed Size at Harvest, #/lb.	Average Yield Bu/A ^{1/}
80,000	No-till	5-23-53	12.5	55	3953	24
125,000	No-till	5-23-53	12.3	56	3919	24
170,000	No-till	5-23-53	12.3	55	3916	24
80,000	Strip-till	22-45-53-6s	15.4	55	4421	23
125,000	Strip-till	22-45-53-6s	14.0	55	3661	24
170,000	Strip-till	22-45-53-6s	12.4	55	3879	26

^{1/} Adjusted to 13 % moisture.