

On-farm Soybean Management Trials

RFR-A1315

Planting population

Methods

Two trials tested how differing planting populations affected system yield. The first trial was conducted in Sac County and compared planting populations of 130,000 and 170,000 seeds/acre. The second trial was conducted in Louisa County and compared planting populations of 125,000 and 150,000. All treatments were replicated three or more times in each trial. Other trial information can be found in Table 1.

Results

Although planting population and subsequent stand differed, planting population did not have a significant effect on yield in either trial (Table 2). Most soybean plant population indicated optimum soybean yields can be obtained with final stands of 100,000 plants/acre or more, plus there is little yield loss unless populations are less than 70,000 plants/acre. These trials support the earlier work.

Table 1. Variety, row spacing, planting date, previous crop, and tillage practices in soybean plant population trials.

Exp. No.	Trial	County	Variety	Row spacing (in.)	Planting date	Previous crop	Tillage
130201	1	Sac	NKS20Y2	8	5/18/13	Corn	No-till
130705	2	Louisa	Asgrow 3231	30	5/17/13	Corn	No-till

Table 2. Spring stand, fall stand, and yield from planting population trials in soybeans.

Exp. No.	Trial	Treatments	Spring stand (plants/A)*	Fall stand (plants/A)*	Yield (bu/A)*	P-value
130201	1	130,000	134,700 a	--	31.2 a	0.65
		170,000	161,700 b	--	31.8 a	
130705	2	125,000	95,600 a	84,100 a	56.8 a	0.70
		150,000	122,100 b	114,900 b	59.0 a	

*Values denoted with the same letter within a trial are not statistically different at the significance level 0.05.

Planting date

Methods

Two soybean planting date studies were conducted in Monona County in 2013. Both trials compared soybeans planted in mid-May with those planted in early June. All treatments were replicated three or more times in each trial. See Table 3 for details on the two trials.

Results

There was no significant difference in grain yield in either trial between soybeans planted in mid-May and those planted in early June (Table 4). In most years, some soybean yield decrease would be expected when planting is delayed beyond early-mid May, but every year is unique. In 2013, the very cool weather in late May may have eliminated any potential yield advantage to the earlier planting date. Also, drought conditions could have reduced potential yields with both planting dates. This is only one year's results and planting date decisions should be based on multi-year studies.

Table 3. Variety, row spacing, planting population, previous crop, and tillage practices in soybean planting date trials.

Exp. No.	Trial	County	Variety	Row spacing (in.)	Planting population (seeds/A)	Previous crop	Tillage
130307	1	Monona	Renze 2889RR	30	139,000	Corn	No-till
130308	2	Monona	Renze 2889RR	30	139,000	Corn	No-till

Table 4. Yield from planting date trials in soybeans.

Exp. No.	Trial	Planting date	Yield (bu/A)	P-value
130307	1	May 14	49.0 a	0.27
		June 3	48.5 a	
130308	2	May 14	46.3 a	0.19
		June 3	47.6 a	

*Values denoted with the same letter within a trial are not statistically different at the significance level 0.05.

Soybean row spacing

Methods

Three trials were conducted in 2013 to compare soybeans grown in wide rows with those grown in narrow rows. In Washington and Pottawattamie counties, a 15-in. row spacing was compared with a 30-in. row spacing. In Buena Vista County, an 18-in. row spacing was compared with a 36-in. row spacing. All treatments were replicated three or more times in each trial. See Table 5 for more details about the trials.

Results

There was no difference in soybean grain yields between row spacings in any of the trials (Table 6). Most research has reported some yield advantage with row spacings of less than 30 in., but the yield advantage is not seen every year. This trial only represents one year's data, and it would be best to make row-spacing decisions on multi-year studies.

Table 5. Variety, planting date, planting population, previous crop, and tillage practices in soybean row spacing trials.

Exp. No.	Trial	County	Variety	Planting date	Planting population (seeds/A)	Previous crop	Tillage
130207	1	Buena Vista	Asgrow 1931 BS	7/8/13	150,000	Corn	Fall disk chisel
130706	2	Washington	Mycogen 5N342R2	5/24/13	160,000	Corn	Spring disk field cultivate
130328	3	Pottawattamie	Asgrow 2834	5/13/13	140,000	Corn	No-till

Table 6. Soybean stand and yield from row spacing trials.

Exp. No.	Trial	Treatments	Stand (plants/A)	Yield (bu/A)	P-value
130207	1	18 in. rows	116,800 a	32.0 a	0.24
		36 in. rows	111,900 a	29.6 a	
130706	2	15 in. rows	112,000 a	35.7 a	0.67
		30 in. rows	106,250 a	36.5 a	
130328	3	15 in. rows	--	70.0 a	0.38
		30 in. rows	--	71.1 a	

*Values denoted with the same letter within a trial are not statistically different at the significance level 0.05.