



Nebraska On-Farm Research Network Late-Planted Soybean Population Research Protocol: Four Populations

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Objective: Identify the most profitable seeding rate and soybean plant population for late-planting that occurs on or after June 10.

Rationale: Producers and agronomists question whether they should be increasing soybean seeding rates to increase yield and profitability when planting soybeans late in season due to weather delays or replant situations. The thinking is that increasing seeding rates will increase canopy cover sooner and capture more sunlight. Also, late-planted soybean form less nodes per plant with less places to set pods, thus more plants may help compensate for this. Soybeans are shorter when planted late and increasing plant populations may increase plant height and move the pods higher above the surface. Most universities have suggested to increase seeding rates when planting soybeans in June. However, research done in Iowa showed that soybean seeding rates/plant populations don't need to be increased as planting is delayed from late April to early June. Previous on-farm research conducted in Nebraska on soybean seeding rates were conducted in April and May. The results suggest that seeding rates greater than 120,000 seeds per acre resulting in more than 100,000 plants per acre rarely increase yield. Is the same true of soybeans planted in June?

Procedure: To accurately determine the optimum planting rate it is suggested that four seeding rates be tested. These will be replicated in the field minimum of 4 times, for a total of 16 strips (see diagram on Page 2).

The following soybean seeding rates are being suggested as a starting point. If these are not preferred or acceptable, the participant may choose their own. Additionally, it is strongly suggested the differences between each population be 30,000 seeds/acre. The highest treatment needs to be sufficient to plateau or maximize yield response in order to estimate optimum populations. Growers will utilize their own planter or drill and will fall into one of the three categories below.

Seeding rates to compare for late-planting			
Seeding Rate 1	Seeding Rate 2	Seeding Rate 3	Seeding Rate 4
90K	120K	150K	180K

Treatment Design: The following is the treatment design for a four population trial. A total of 4 replications are needed for this trial. The same variety and management practices should be used across the entire study area.

NOTE: Rows planted in each treatment need to be equal to or greater than soybean header width.

Replication 1	90k	Yield:
	120k	Yield:
	150k	Yield:
	180k	Yield:
Replication 2	120k	Yield:
	180k	Yield:
	150k	Yield:
	90k	Yield:
Replication 3	120k	Yield:
	90k	Yield:
	180k	Yield:
	150k	Yield:
Replication 4	150k	Yield:
	90k	Yield:
	120k	Yield:
	180k	Yield:

Grower Requirements:

1. Flag or mark GPS location of each treatment.
2. Provide all necessary inputs for crop production.
3. Complete background agronomic form about site and practices.
4. Collect yield data and grain moisture with weight wagon or yield monitor. If using yield monitor, please designate a separate “load” for each treatment and set up separate “products” names for each treatment harvested. Yield monitor must be **well calibrated**. Contact UNL Extension if assistance with this process is needed.
5. Collect stand counts at harvest.
6. Submit harvest data to Nebraska Extension within 30 days of harvest or by Dec. 15.
7. Allow Nebraska Extension to use submitted and collected data for research, educational, and informational purposes.

Nebraska On-Farm Research Network will:

1. Provide technical assistance in setting up replicated and randomized experimental design.
2. Provide assistance upon request with treatment implementation, flagging, stand counts, and recording yield.
3. Analyze raw data using statistical analysis and provide this information to the grower.

Disclaimer: The Nebraska On-Farm Research Network does not endorse the use of products tested in on-farm replicated strip trials. While treatments are replicated within trials and may be replicated across multiple sites under various conditions, your individual results may vary.

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