



## Boots on the Ground: Soybean Yield Gap On-Farm Research

### Soybean Research Protocol: Planting Date, Rate, Fungicide, and Insecticide

**Yield Gap Project:** Analysis of producer survey data revealed: (1) an average yield gap of 20-30% between current farmer yield and potential yield as determined by climate, soil, and genetics, and (2) a number of agronomic practices that, for a given soil-climate context, can be fine-tuned to close the gap and improve soybean producer profit.

**In Nebraska, three practices have been identified as being important for improving yield and producer profit. These practices relate to planting date, seeding rate, and the use of foliar fungicides and insecticides. We will test ‘improved’ practices versus ‘baseline’ practices.**

We will be looking for 20 cooperating producers in 2019 and 20 cooperating producers in 2020.

#### SUGGESTED PLOT LAYOUT

This study will look at 2 treatments, the “Baseline” and the “Improved”.

**Baseline treatment:** Late planted soybean (after May 15) + no foliar fungicide or insecticide + seeding rate of 160,000 seeds/ac.

**Improved treatment:** Early planted soybean (late April/early May) + foliar fungicide and insecticide around R3 stage (beginning of pod setting) + seeding rate around 130,000 seeds/ac.

Both baseline and improved treatments need to be using the same soybean variety and the same seed treatment (both should have seed treatment). The area that is harvested for yield measurements should avoid sprayer tracks or both the baseline and improved should have sprayer tracks.

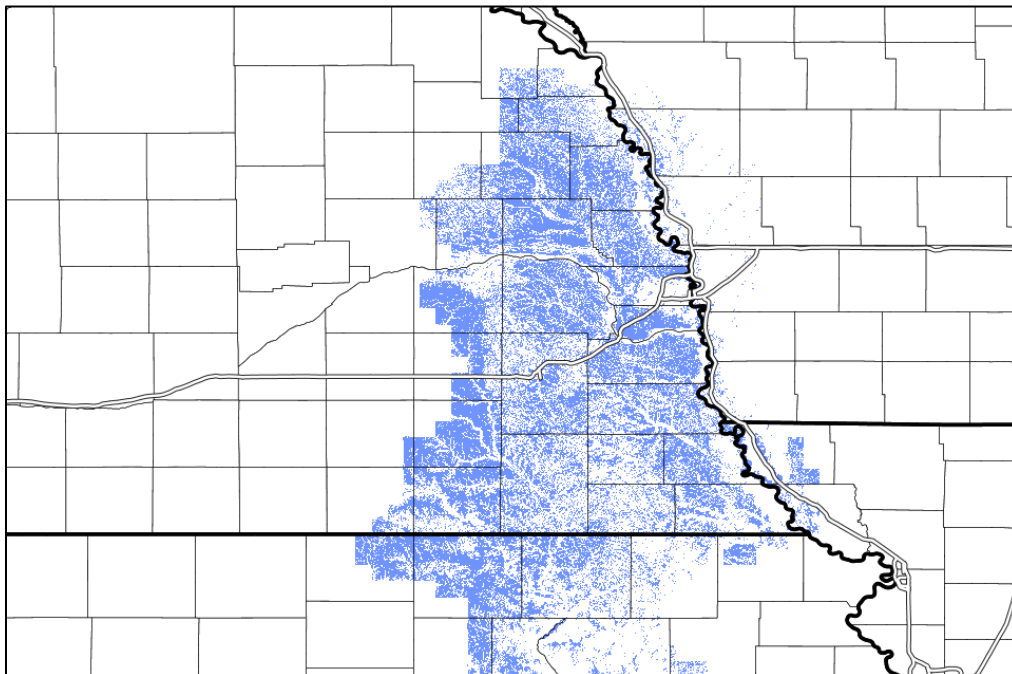
The following is the layout. A total of 4 pairs (replicates) need to be harvested for this trial. Treatment strips will need to be as wide as the widest piece of equipment used (likely the sprayer).

**NOTE:** Yield from the full header width needs to be obtained for each treatment strip as shown below.

Replication 1	Baseline (late planting, no foliar fung/insec, 160,000 seeds/ac)	Yield:
	Improved (early planting, foliar fung & insect, 130,000 seeds/ac)	Yield:
Replication 2	Improved (early planting, foliar fung & insect, 130,000 seeds/ac)	Yield:
	Baseline (late planting, no foliar fung/insec, 160,000 seeds/ac)	Yield:
Replication 3	Baseline (late planting, no foliar fung/insec, 160,000 seeds/ac)	Yield:
	Improved (early planting, foliar fung & insect, 130,000 seeds/ac)	Yield:
Replication 4	Improved (early planting, foliar fung & insect, 130,000 seeds/ac)	Yield:
	Baseline (late planting, no foliar fung/insec, 160,000 seeds/ac)	Yield:

## AREA OF INTEREST

- We are looking specifically for fields shown in the shaded blue areas below.
- Fields can be irrigated or non-irrigated. No tile drainage fields.
- Preferably, fields should be no-till or reduced till though we are flexible on this requirement.



## WHAT WE NEED FROM YOU:

- Implement research project using the plot layout below with your equipment and inputs
- Provide as-planted and as-applied maps as available
- Harvest the plot using a well calibrated yield monitor or weight wagon
- Provide the data and management information to us
- Provide seed samples from each strip

## WHAT WE WILL DO FOR YOU:

- Provide a detailed analysis and report of the data from your farm
- Assist with specifics of plot layout and harvesting
- Assist with flagging and GPS locating of strips (need both flags and GPS)
- Assist with collecting stand counts of each treatment
- Provide soil test and seed quality results from the samples taken from your field.
- Engage participating farmers in an on-farm network to share ideas on soybean BMPs and aggregate summary reports

**To get involved with this research, please contact us or your local extension educator**

Laura Thompson  
Nebraska Extension Educator  
402-245-2224  
[laura.thompson@unl.edu](mailto:laura.thompson@unl.edu)

Keith Glewen  
Nebraska Extension Educator  
402-624-8030  
[kglewen1@unl.edu](mailto:kglewen1@unl.edu)