

MU Certified Strip Trial Program

2017 ILeVO® Trial Harvest Report

Site number: 10

County: Adair

Extension Contact – Kent Shannon, Agricultural Engineer

Results Summary

- Whole strip yields indicate ILeVO increased yield five bushels per acre and the difference was statistically significant.
- An assessment of within-strip variability estimated that the benefit of ILeVO was greater than or equal to zero for about 90% of the trial.
- Scouting found no confirmed Sudden Death Syndrome at this location.
- Soil sampling in the spring indicated primarily moderate levels of Soybean Cyst Nematode (SCN). Mean SCN numbers after harvest were unchanged. There was no effect of ILeVO on SCN numbers at this location.

The mission of the MU Certified Strip Trial Program is to help farmers validate management decisions on their farm and document efficiency and environmental stewardship.

The MU Certified Strip Trial Program is funded by:

MU Extension, the Missouri Soybean Merchandising Council, and the Missouri Corn Merchandising Council.

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Figure 1a. Aerial photography taken August 29, 2017, showing strip trial layout in the field.

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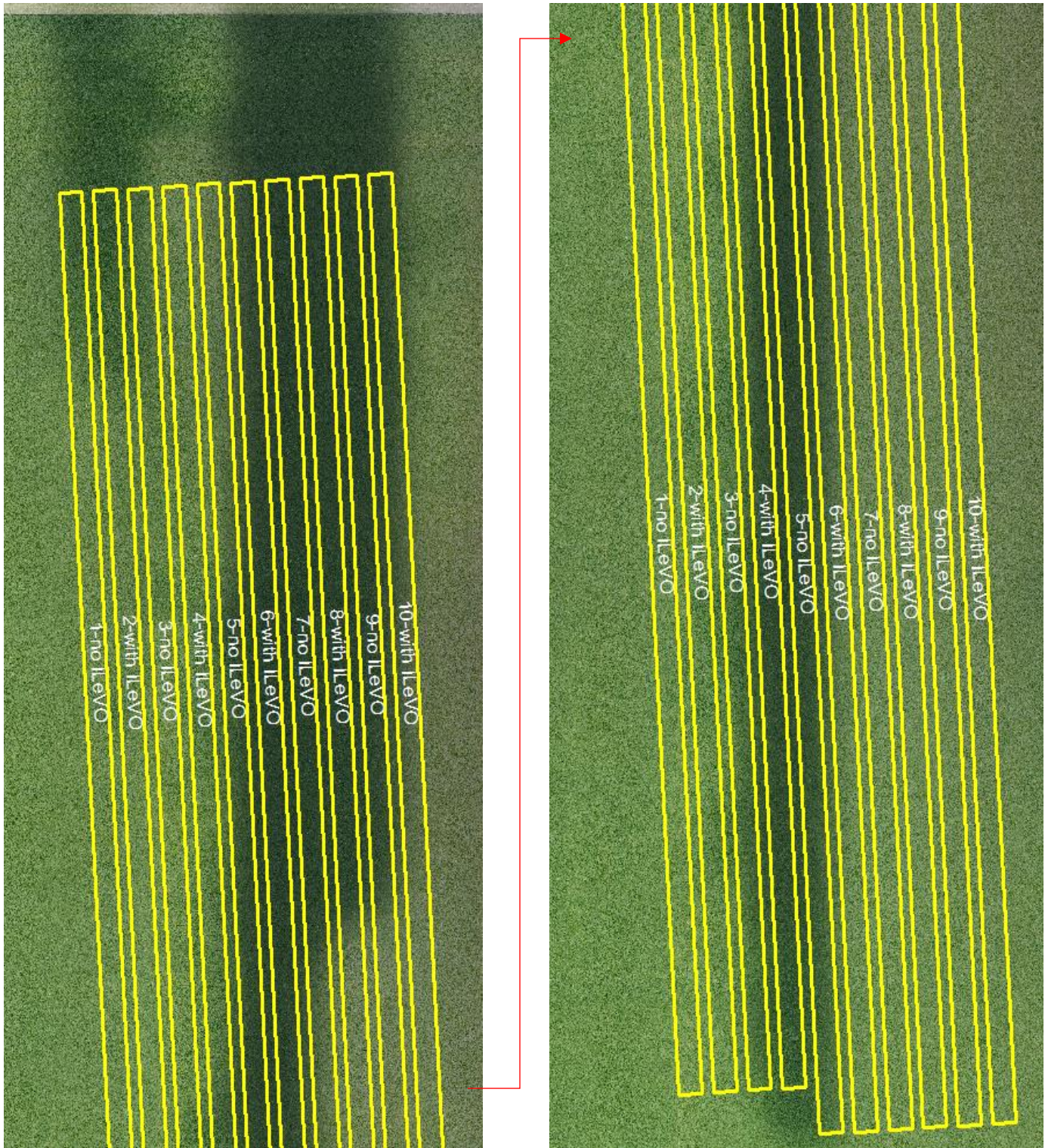


Figure 1b. Aerial photography taken August 29, 2017, showing strip trial layout in the field.

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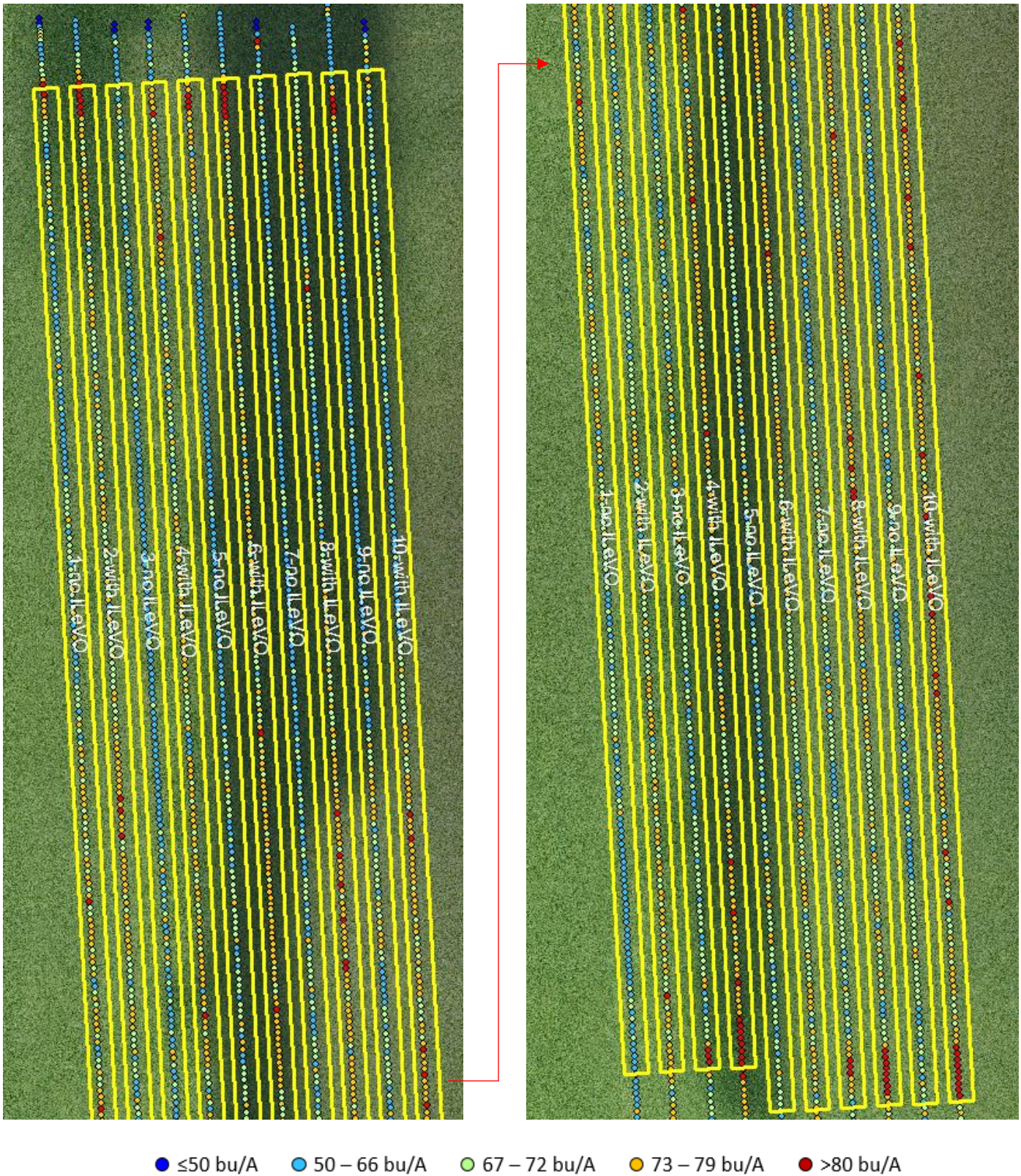


Figure 2. Yield monitor data reported as bushels per acre. Soybeans were harvested November 1, 2017.

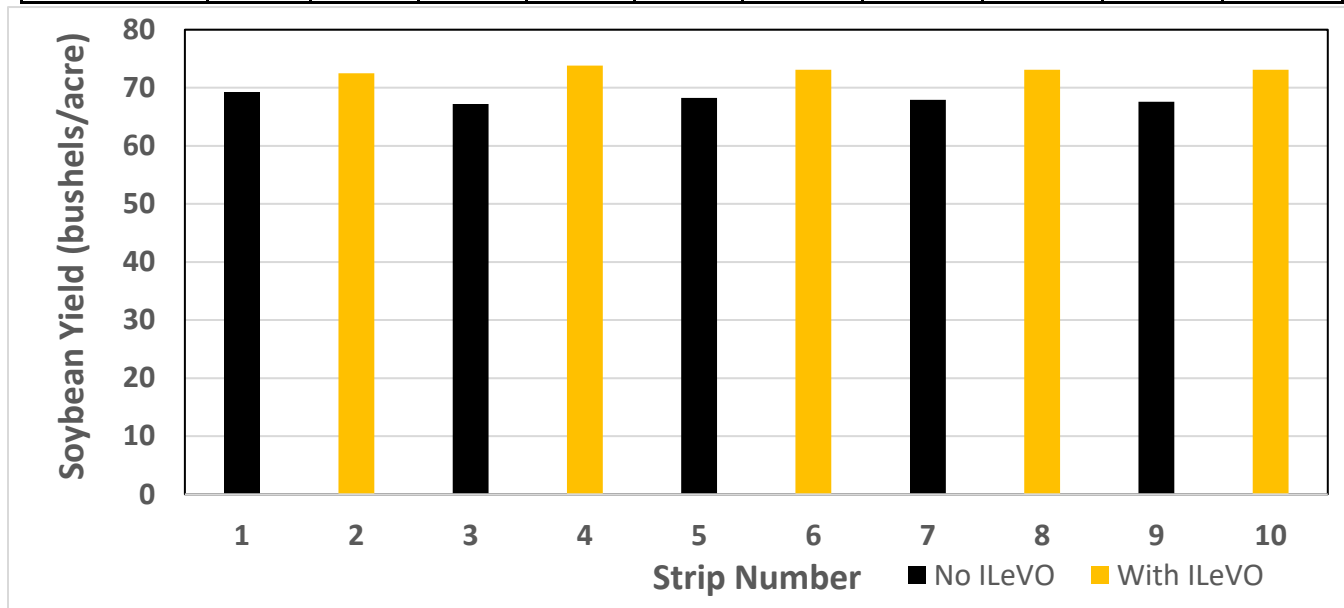
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Table/Graph 1. Whole-strip soybean yields:

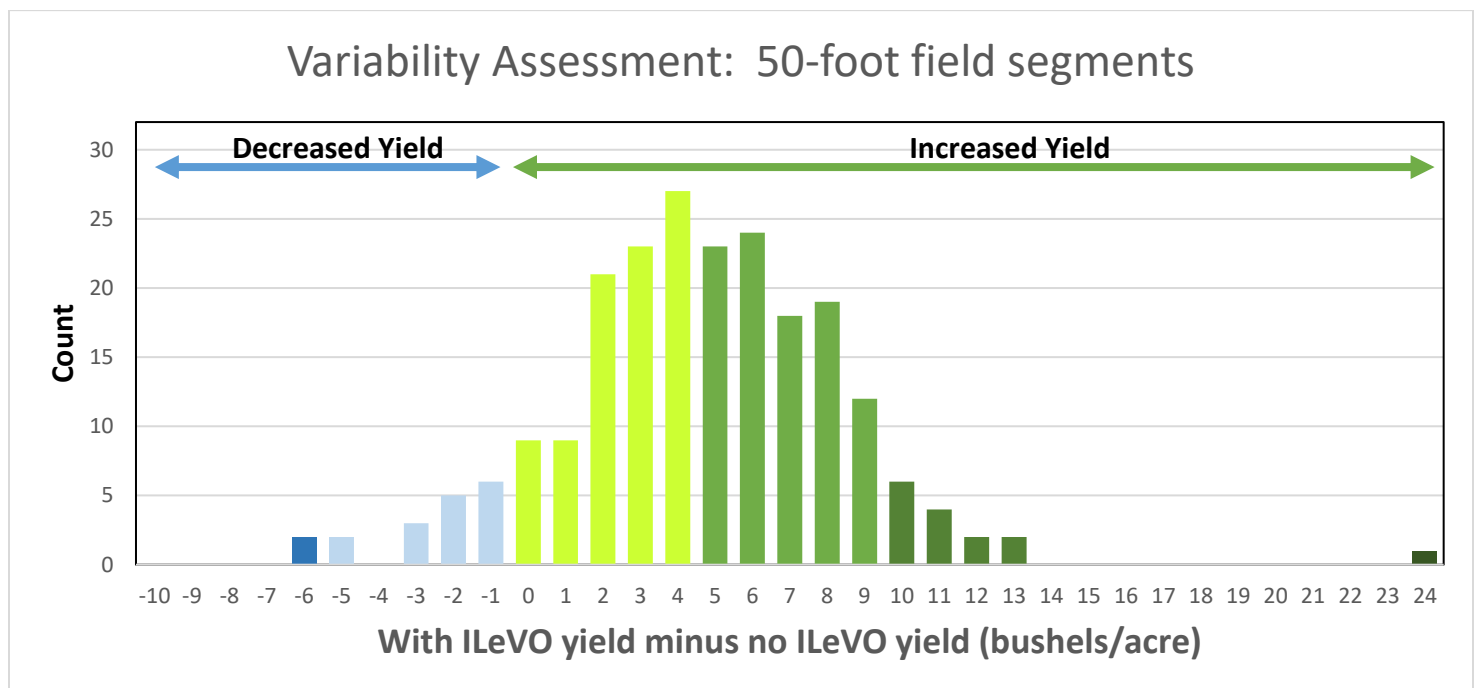
Mean yield for all strips was 70 bu/A (73 bu/A with ILeVO; 68 bu/A without).

The five bushel per acre difference was statistically significant.

Strip	1	2	3	4	5	6	7	8	9	10
ILeVO?	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Yield (bu/A)	69	72	67	73	68	73	68	73	68	73



Graph 2. Field variability: Estimated yield “benefit” of ILeVO.



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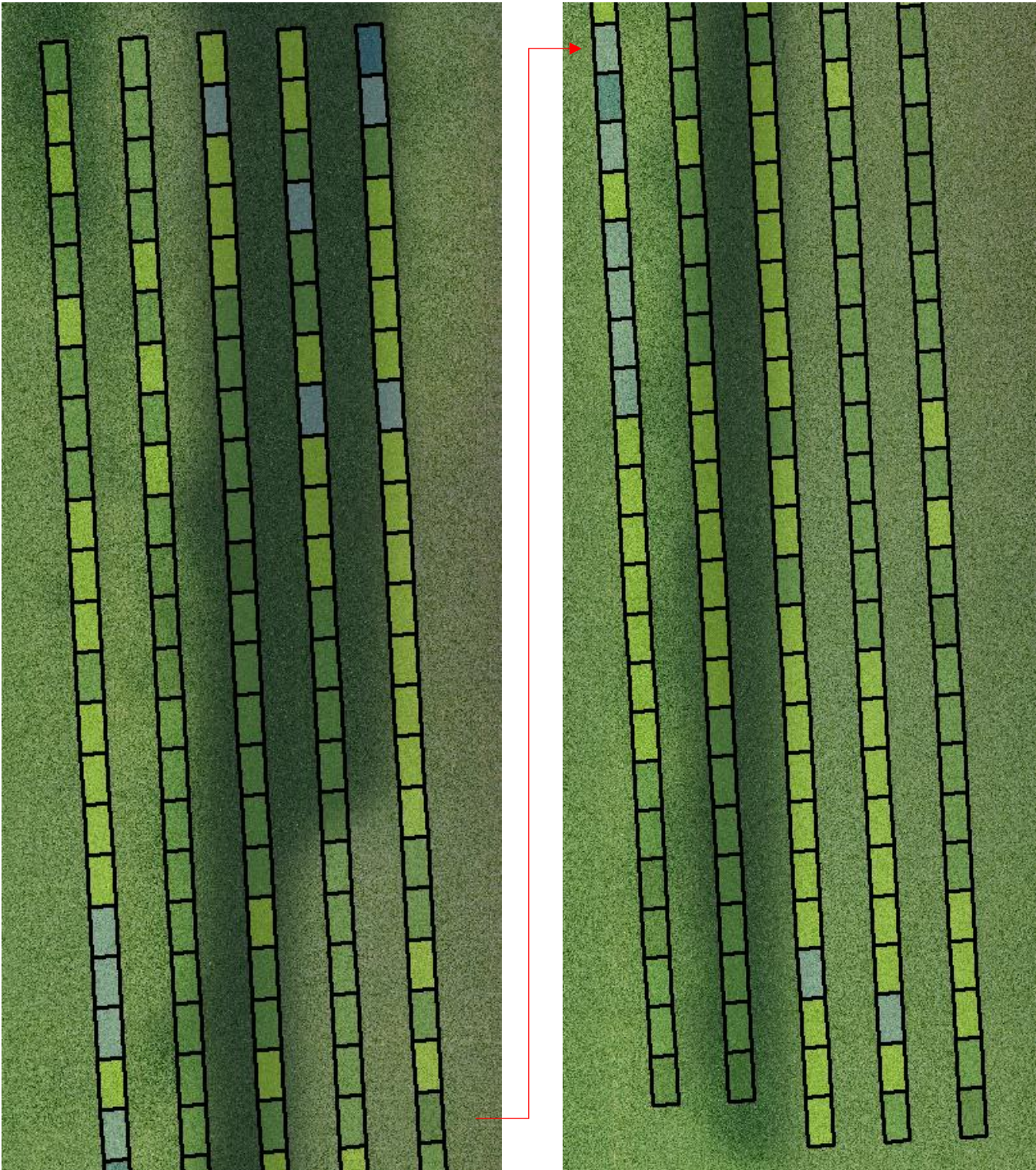


Figure 3. Field variability in the yield effect of ILeVO: Colors match previous figure. Green segments are where the calculated yield difference was ≥ 0 ; blue segments are where ILeVO effect was negative.

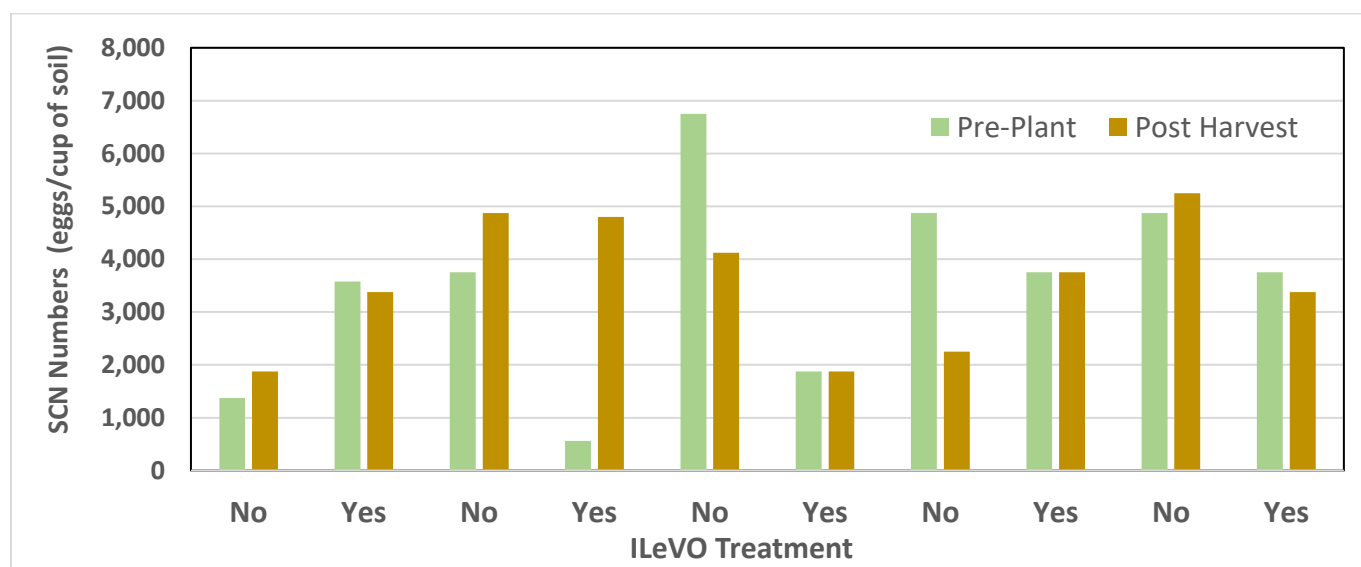
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Soil samples were taken from the same 10 points in the field the day after planting and after soybean harvest and tested for soybean cyst nematode (SCN). Soil samples were taken 5/9/2017 (pre-plant) and 11/9/2017 (post-harvest) from sampling points that were 12 feet circles along transect across the plots about 100 feet from the northern side of the plot area. There was no evidence that ILeVO affected SCN numbers at this location.

Table 2. Soybean Cyst Nematode (SCN) soil sampling results (eggs/cup of soil).

	Pre-Plant		Post-Harvest	
Treatment	SCN (eggs/cup)	SCN Rating	SCN (eggs/cup)	SCN Rating
No ILeVO	1,375	Moderate	1,875	Moderate
With ILeVO	3,575	Moderate	3,375	Moderate
No ILeVO	3,750	Moderate	4,875	Moderate
With ILeVO	563	Moderate	4,800	Moderate
No ILeVO	6,750	Moderate	4,125	Moderate
With ILeVO	1,875	Moderate	1,875	Moderate
No ILeVO	4,875	Moderate	2,250	Moderate
With ILeVO	3,750	Moderate	3,750	Moderate
No ILeVO	4,875	Moderate	5,250	Moderate
With ILeVO	3,750	Moderate	3,375	Moderate
Means	3,514		3,555	

Graph 3. Graphical representation of Soybean Cyst Nematode (SCN) numbers pre-plant and post-harvest from 10 sampling points in the field.

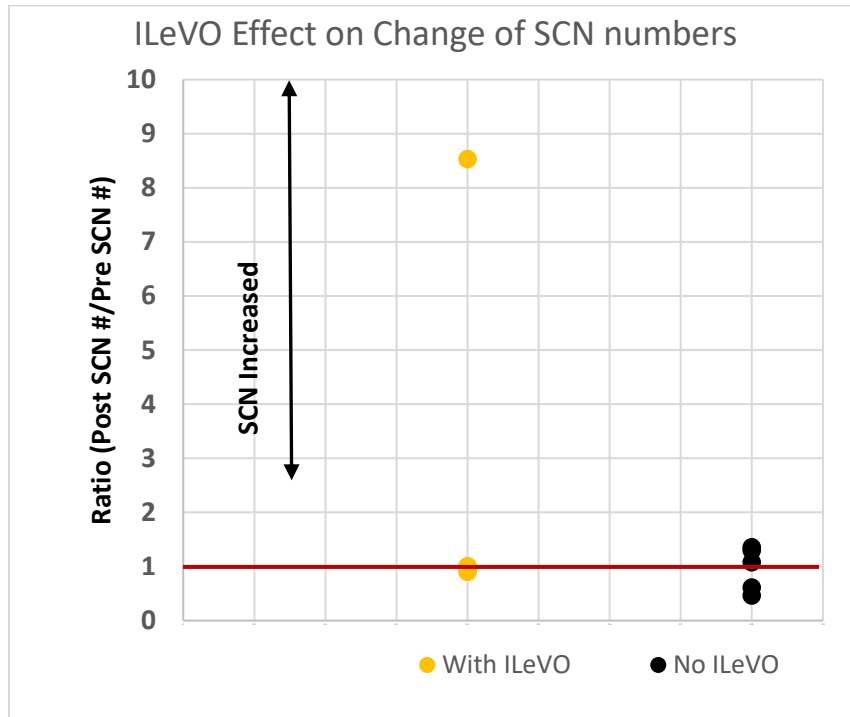


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To assess the effect of ILeVO on SCN numbers, the ratio of SCN numbers were calculated at post-harvest divided by SCN numbers at pre-plant (Post-harvest SCN #/Pre-plant SCN #) for each of the 10 sampling points.

In the figure below, no change in SCN numbers =1. Above 1, SCN numbers increased over the growing season.

Graph 4. Increase in SCN numbers between pre-plant and post-harvest samplings.



There was no evidence that ILeVO affected SCN numbers. Removing the one outlier at point 4, the ratio of post-harvest versus pre-plant SCN numbers equaled one for both treatments. When the outlier was included, the ILeVO treatment had a mean of 2.4 times higher SCN numbers at the end of the growing season. These results imply that SCN numbers were unchanged over the growing season at this location and the result was not affected by ILeVO.

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Management Information

Location characteristics:	Trial size: 22 acres	Dominant soil type: Silt Loam	
Crop rotation:	Previous crop: Corn	Current crop: Soybean	
Soybean variety:	DynaGRO S40LL35	SCN resistant: Yes	SDS resistant: Yes
Agronomic information:	Planted: 5/8/2017	Harvested: 11/1/2017	
Other seed treatments:	Fungicide		
SDS history:	History of SDS: No	Confirmed SDS in 2017: No	

Location Notes:

- This whole field was planted as strips. Ten strips were used for analysis. The program is appreciative of receiving results from the whole field. The added information will be used to test alternative approaches to running this type of trial. Those results will be shared when the additional analysis is completed.
- There was an aerial survey completed August 29, 2017.
- There was no SDS found at this location. There was possible *cercospera* damage.

