

MU Certified Strip Trial Program

2017 ILeVO® Trial Harvest Report

Site number: 15

County: Audrain

Extension Contact – Wyatt Miller, Agronomist

Results Summary

- Whole strip yields indicate ILeVO increased yield 2.2 bushels/acre and there was evidence that 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 72% of the trial.
- At this location the farmer provided weigh wagon weight for each strip. These documented that the yield monitor was calibrated within 1.4% of the weigh wagon data. Whole-strip conclusions were similar between the yield monitor and weigh wagon data.
- Scouting indicated no Sudden Death Syndrome at this location.
- Soybean Cyst Nematode (SCN) increased over the growing season. There was no statistical evidence these differences were affected by ILeVO.

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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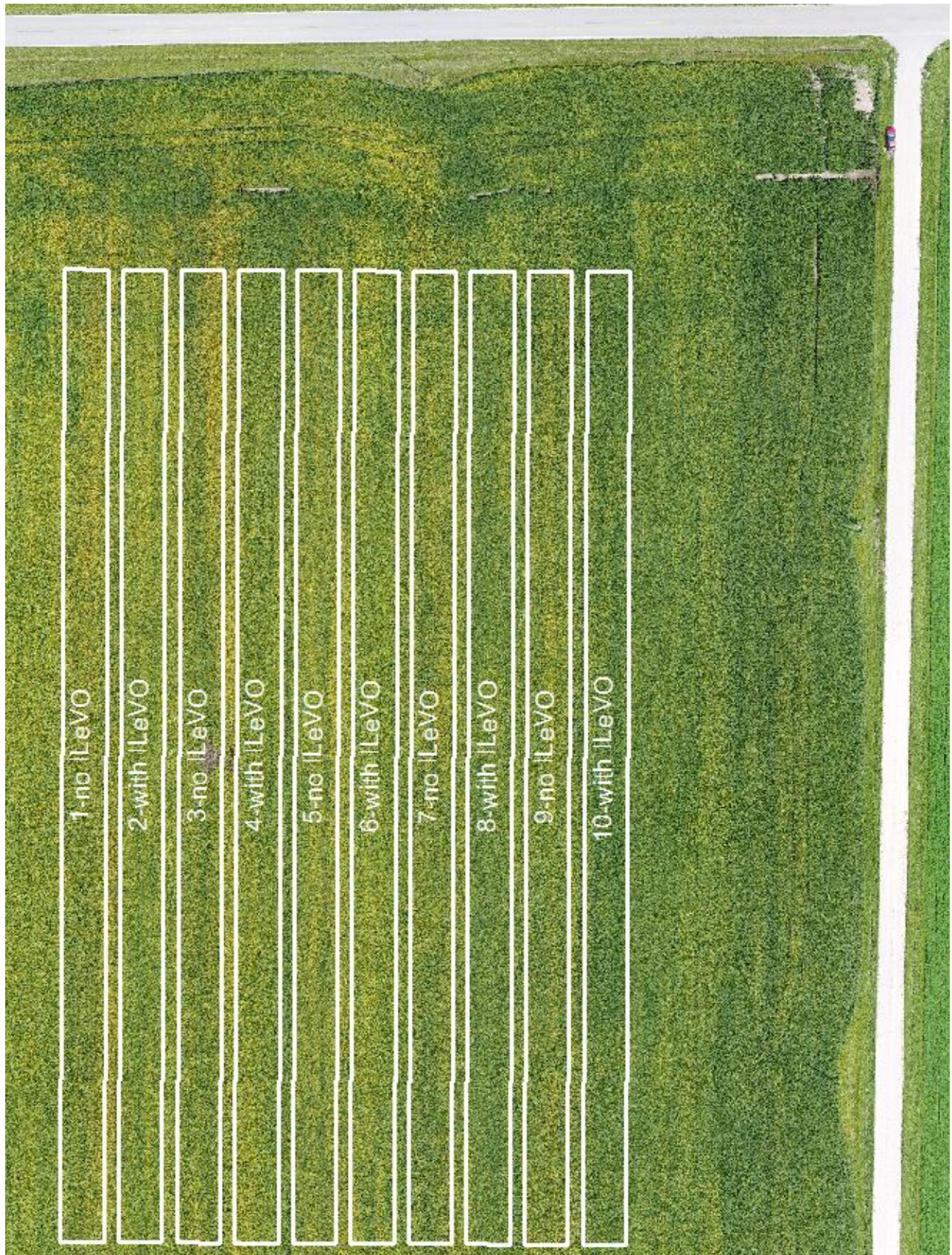


Figure 1. Aerial photography taken August 30, 2017, showing strip trial layout in the field.

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Figure 2. Yield monitor data reported as bushels per acre. Soybeans were harvested September 21, 2017.

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Table/Graph 1. Whole Strip Yields.

This site had both yield monitor data and weigh wagon data. In the standard assessment, data at the ends of the strips were trimmed to account for errors in yield monitor data at the start and end of a pass. Additionally, there were issues with data at the southern end of the plots. Therefore, 700 feet of yield data was trimmed from the southern end of the plots. This is shown in Figure 2.

Strip	1	2	3	4	5	6	7	8	9	10
ILeVO?	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Yield Monitor (bushels per acre)										
Trimmed	73	72	69	74	72	72	73	76	76	79
Whole pass	72	71	67	71	69	71	72	76	75	79
Weigh Wagon Data (bushels per acre)										
Whole pass	71.8	71.7	67.8	71.9	70.2	72.5	73.2	76.7	76.7	80.3

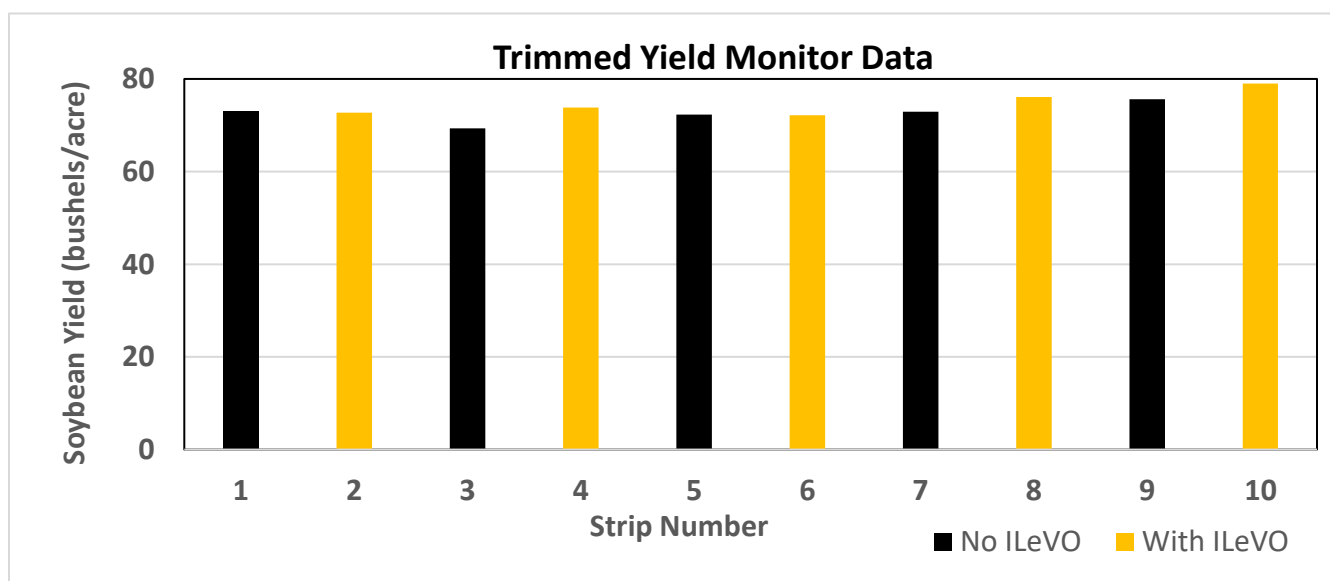


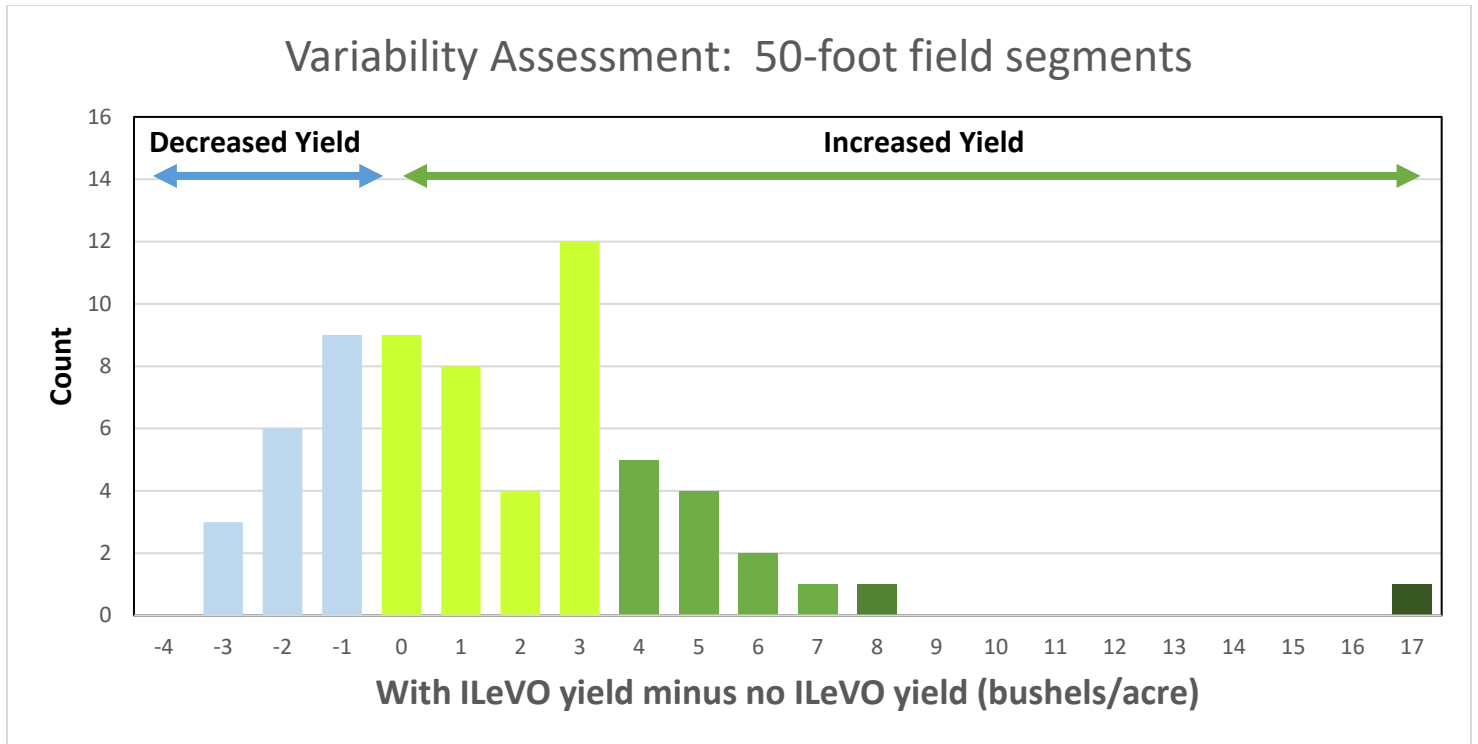
Table 2: Summary of treatment means for different strip yield measurements. In all cases, the effect of ILeVO on yield was significant.

	All Strips (10 strips)	With ILeVO (5 strips)	No ILeVO (5 strips)
	<i>bushels per acre</i>		
Trimmed Yield Monitor data	73.7	74.8	72.6
Whole Pass Yield Monitor data	72.2	73.4	71.0
Weigh Wagon data	73.3	74.6	71.9

The calibration of the yield monitor based on whole-pass harvested grain was also tested. The mean error for the 10 comparisons was 1.4% lower yield measured by the yield monitor (range -0.2% to -2.5%).

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



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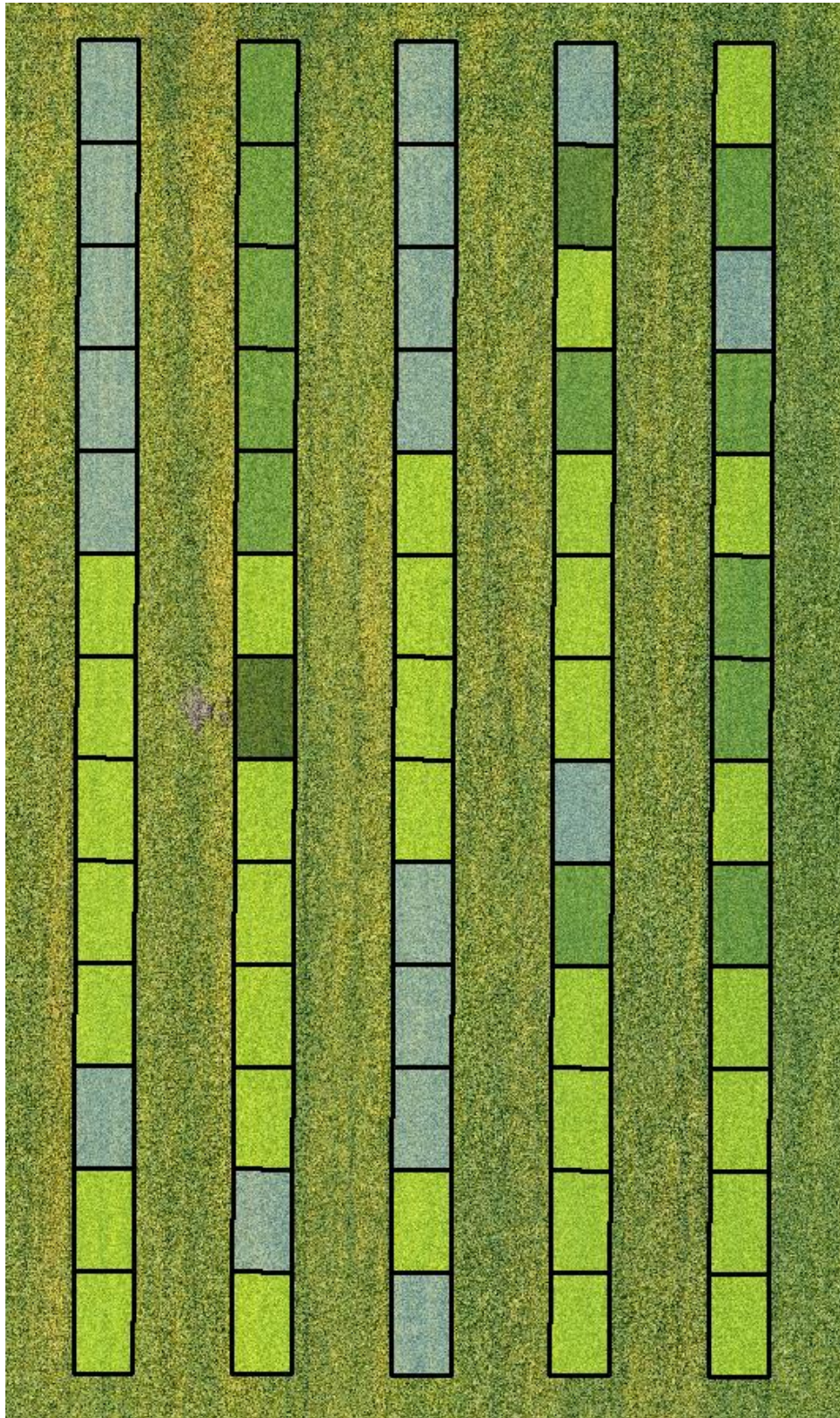


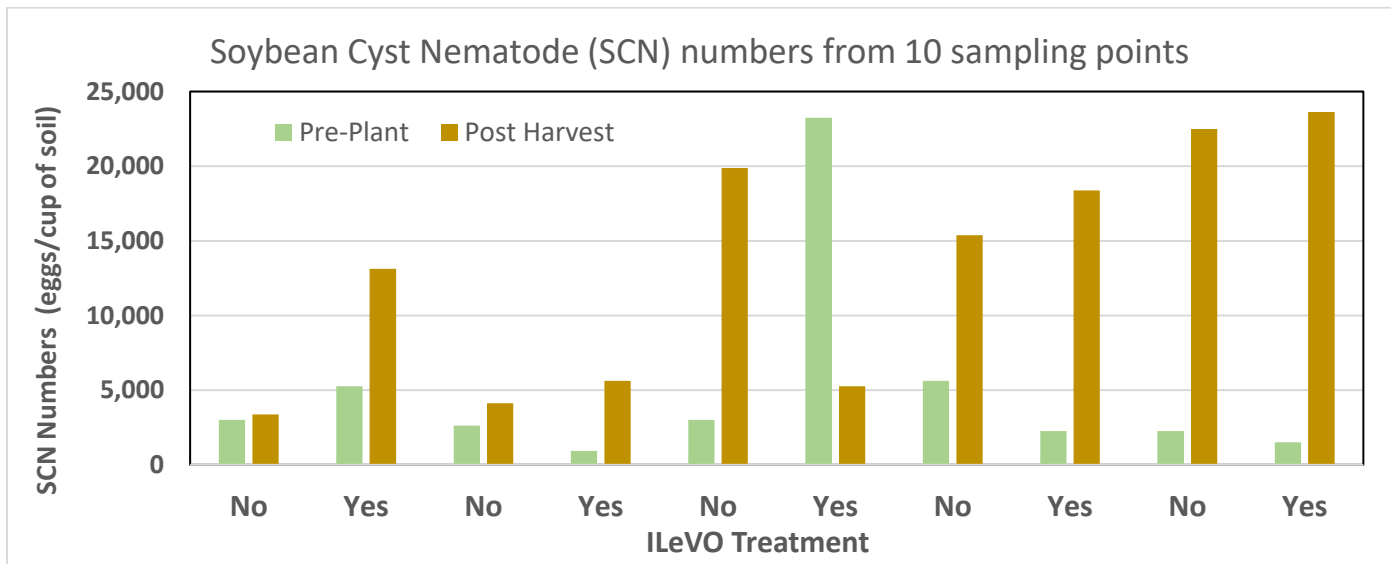
Figure 3. Field variability in the yield effect of ILeVO: Colors match previous figure. Green segments are where the calculated yield difference was ≥ 0 ; blue segments are where ILeVO effect was negative.

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Table 3. Soybean Cyst Nematode (SCN) soil sampling results (eggs/cup of soil).

Treatment	Pre-Plant		Post-Harvest	
	SCN (eggs/cup)	SCN Rating	SCN (eggs/cup)	SCN Rating
No ILeVO	3,000	High	3,375	Moderate
With ILeVO	5,250	Moderate	13,125	High
No ILeVO	2,625	Moderate	4,125	Moderate
With ILeVO	938	Moderate	5,625	Moderate
No ILeVO	3,000	Moderate	19,875	High
With ILeVO	23,250	High	5,250	Moderate
No ILeVO	5,625	Moderate	15,375	High
With ILeVO	2,250	Moderate	18,375	High
No ILeVO	2,250	Moderate	22,500	High
With ILeVO	1,500	Moderate	23,625	High
Means	4,969		13,125	

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



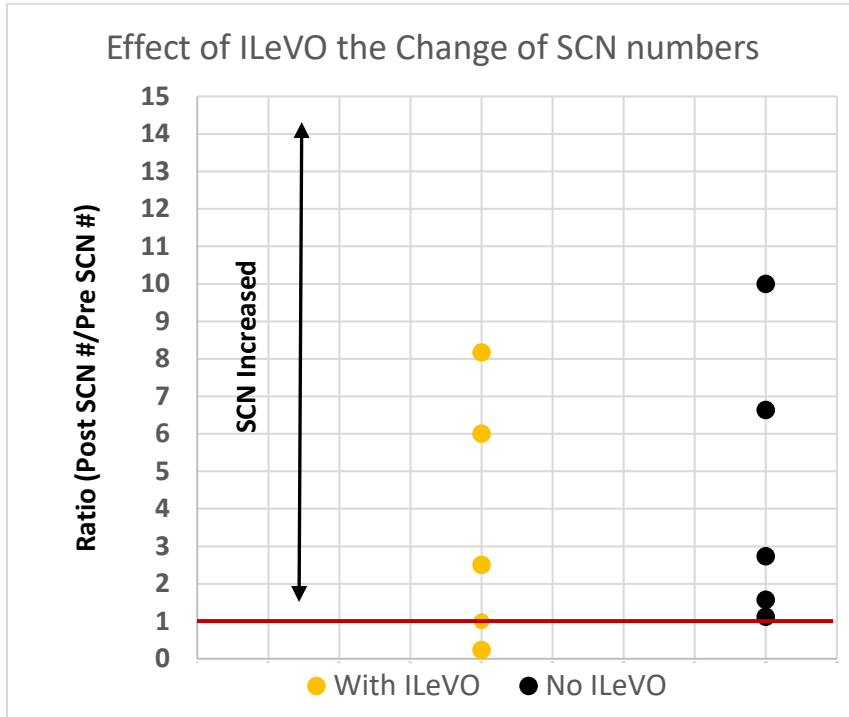
Samples were taken 5/2/2017 (pre-plant) and 10/11/2017 (post-harvest) in the same 10 locations in the field. Sampling points were 12 feet circles along transect running roughly east-west across the plots about 100 feet from the north end of the strips. SCN numbers increased over the growing season.

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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.



SCN numbers averaged 5.5 times higher in the fall (4.4 times higher with ILeVO and 6.5 times higher with no ILeVO). There was no statistical evidence that ILeVO affected this change.

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Management Information

Location characteristics:	Trial size: 8 acres	Dominant soil type: Silt Loam	
Crop rotation:	Previous crop: Corn	Current crop: Soybean	
Soybean variety:	Beck's 394L4	SCN resistant: Yes	SDS resistant: Yes
Agronomic information:	Planted: 4/25/2017	Harvested: 9/21/2017	
Other seed treatments:	Escalate		
SDS history:	History of SDS: Yes	Confirmed SDS in 2017: No	

Location Notes:

- The field already had significant senescence when aerial photography was taken on August 30th.

