

CY Farms 2019 Soybean Grain Yield Report

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Project Summary

In the past year, work has focused on soybean yield data as part of a regional project to evaluate soil type-specific yield potentials on individual farms and to develop a yield potential database for soybeans, which currently does not exist. Yield monitor data allow for the evaluation of both spatial and temporal yield variability for all fields, soil types, and management zones within a specific farm. This information will help identify areas of high yield potential, areas of stable yield versus variable yield over time. The latter is useful for the development of management zones that can lead to increased yield and yield stability over time. When three years or more of data are available, the yield data can then be used to develop yield stability maps for farmers for improvements in nutrient management.

This report shows the yield for (1) the farm per year of data submitted, (2) each of the fields for which we received yield records in the current year, and (3) yields per soil type within a field (current year as well). Calculated acres per field were derived from actual cleaned data points and hence will not match with the overall field acres based on the boundary file. Yield data are then grouped by soil type to generate “frequency distributions or histograms” so averages per soil type can be determined.

We are grateful for your submission of farm yield data to us for the purpose of creating a yield potential database for soybean. Your data are added to a larger and growing database of yield values for specific soil types and once we have sufficient amounts of yield data, yield potentials per soil type can be derived. This project will be strengthened by large participation by farmers across the state and is expected to grow in size over time as funding is secured and more farms participate.

2019 Yield Data Summary

Yield monitor soybean data from 16 fields harvested in 2019 were analyzed. The tables and figures that follow present annual yield (bu/acre) at the whole farm level; yield at the field level and soil type within field level (presented in Appendix I and II); and yield at soil type level within the farm (presented in figure at the end). In Appendix II, predominant or major soil for a particular field is the one with the largest area shown in the last column.

In total, 318 acres were analyzed in 2019, based on the whole field dataset that we received. Once headlands were removed, 215 acres remained. Because fields vary greatly in size, an area weighted Soybean grain yield was calculated to represent the whole farm yield value. Based on the whole field dataset for the farm, the area weighted average farm yield was 57.0 bu/acre (whole fields including headlands) and 61.6 bu/acre (whole field excluding headlands). Yield on a per field basis ranged from 29.2 to 67.0 bu/acre for WF and from 35.3 to 68.8 bu/acre for WFNH.

Table 1: 2019 Soybean grain yield (bu/acre) and area summary for the whole farm. Area weighted averages across 16 fields. WF=Whole field with headlands. WFNH=Whole field without headlands.

Year	Average yield WF bu/acre	Area WF acres	Average yield WFNH bu/acre	Area WFNH acres	Headland impact on WF average yield (WF-WFNH) bu/acre	Area headland acres
2019	57.0	318	61.6	215	-4.6	103
2018	60.9	469	64.4	317	-3.5	152
2017	54.7	367	56.9	241	-2.2	126
2016	54.3	322	59.7	189	-5.4	133
2015	43.1	340	44.8	212	-1.7	128

Appendix I.

2019 Soybean grain yield (bu/acre) and area summary by field. WF=Whole field with headlands. WFNH=Whole field without headlands included.

Field	Area (as planted)	Yield WF	Area WF	Yield WFNH	Area WFNH	Yield Difference (WF minus WFNH)	Area Head- land
	acres	bu/acre	acres	bu/acre	acres	bu/acre	acres
644		48.3	7.3	49.5	4.2	-1.2	3.2
643		50.5	7.7	52.8	4.8	-2.3	2.9
645		53.4	27.1	55.0	18.7	-1.6	8.4
581		50.9	2.9	57.6	1.2	-6.7	1.7
582		35.4	2.1	38.1	1.1	-2.7	1.0
583		48.1	28.8	53.9	22.0	-5.9	6.9
584		55.7	18.5	62.5	14.4	-6.8	4.1
585		29.2	4.6	39.7	1.4	-10.6	3.2
713		67.0	159.1	68.8	116.9	-1.9	42.2
605		40.7	3.5	49.6	0.9	-8.9	2.6
606		40.5	15.6	46.8	9.0	-6.3	6.5
607		32.8	2.7	35.3	0.6	-2.5	2.1
610		40.5	9.4	48.8	6.6	-8.3	2.9
871		43.0	13.5	46.9	4.9	-3.9	8.6
872		50.9	4.0	54.6	1.9	-3.7	2.1
873		44.3	10.7	48.1	6.6	-3.8	4.1

Appendix II.

2019 Soybean grain yield (bu/acre) by soil type. Predominant soil type of each field is also listed in the table.

Field	Soil type	Predominant soil type	Yield soil type bu/acre	Area soil type acres
644	Kendaia	Kendaia	49.8	4.0
643	Hilton-Cazenovia	Hilton-Cazenovia	48.0	2.5
643	Kendaia	Hilton-Cazenovia	58.2	2.2
645	Kendaia	Kendaia	53.8	16.0
645	Lyons	Kendaia	62.4	2.6
581	Minoa	Minoa	57.6	1.2
583	Cazenovia	Cazenovia	45.7	11.6
583	Galen	Cazenovia	63.0	9.6
584	Cazenovia	Cazenovia	62.1	9.7
584	Galen	Cazenovia	62.4	4.3
585	Ontario	Ontario	41.5	1.1
713	Niagara	Niagara	69.7	44.2
713	Galen	Niagara	68.3	8.1
713	Alton	Niagara	65.3	1.6
713	Bombay	Niagara	67.7	28.5
713	Canandaigua	Niagara	68.3	5.2
713	Claverack	Niagara	76.0	2.0
713	Collamer	Niagara	68.6	25.9
606	Ontario	Ontario	45.2	8.4
610	Ovid	Lima	56.9	2.5
610	Lima	Lima	45.2	4.1
871	Ontario	Lima	40.3	1.2
871	Lima	Lima	49.3	2.3
872	Ontario	Ontario	54.6	1.7
873	Ontario	Lima	46.1	1.7
873	Lima	Lima	48.6	4.6

Appendix III.

Multi-year histograms of yield for each soil type represented on the farm.





