Domoy 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 7 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, 85 acres were analyzed in 2019, based on the whole field dataset that we received. Once headlands were removed, 63 acres remained. Since 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 26.8 bu/acre (whole fields including headlands) and 27.4 bu/acre (whole field excluding headlands). Yield on a per field basis ranged from 17.9 to 35.9 bu/acre for WF and from 18.2 to 39.0 bu/acre for WFNH.

Table 1: 2019 Soybean grain yield (bu/acre) and area summary for the whole farm. Area weighted averages across 7 fields. WF=Whole field with headlands. WFNH=Whole field without headlands.

Year	Average yield WF	Area WF	Average yield WFNH	Area WFNH	Headland impact on WF average yield (WF-WFNH)	Area headland
	bu/acre	acres	bu/acre	acres	bu/acre	acres
2019	26.8	85	27.4	63	-0.6	22

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
Home farm_Flats		20.8	12.1	20.8	7.6	0.0	4.5
Pask_Big Pond		24.4	12.0	24.3	8.9	0.2	3.1
Pask_David Davis		26.4	14.2	26.9	13.5	-0.4	0.7
Pask_Lean-to		24.7	4.4	25.8	2.1	-1.1	2.3
Paul Gillette_Allis_E		17.9	12.4	18.2	11.4	-0.3	1.0
Rowcliffe_Back		25.3	4.7	29.6	3.2	-4.3	1.5
Rowcliffe_Front		35.9	25.5	39.0	16.0	-3.2	9.5

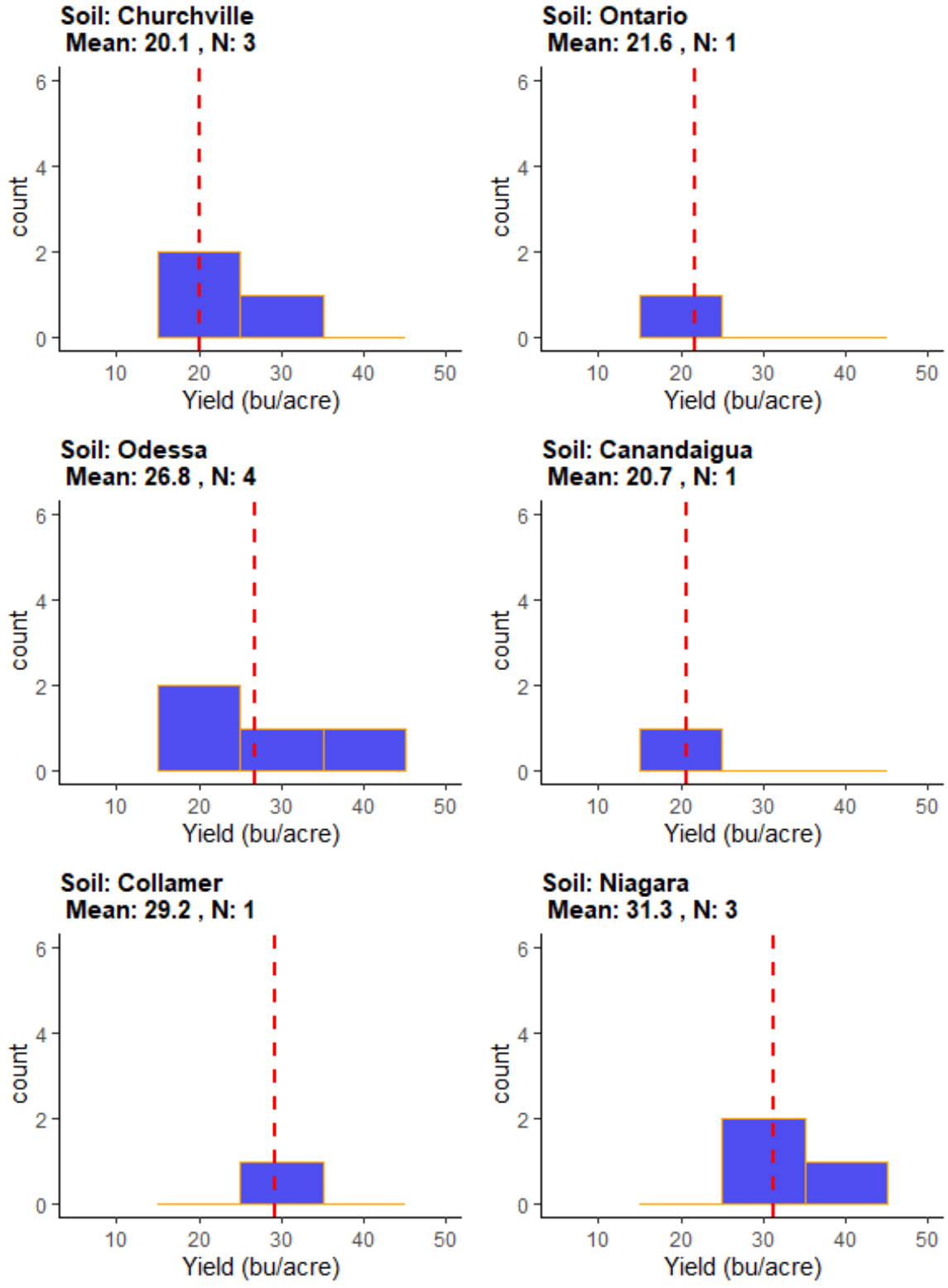
Appendix II.

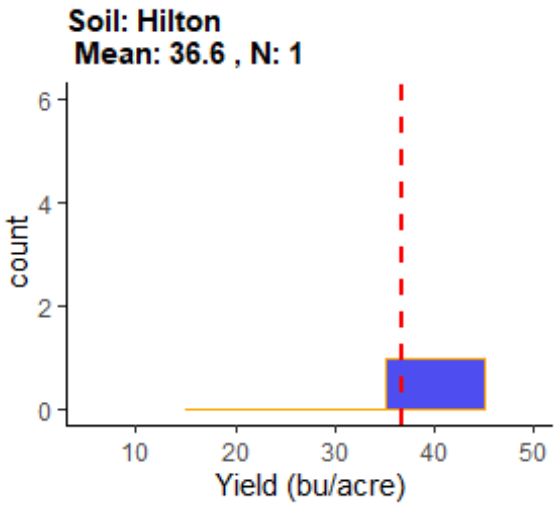
2019 Soybean grain yield (bu/acre) by soil type. Predominant soil type of each field is also listed in the table.

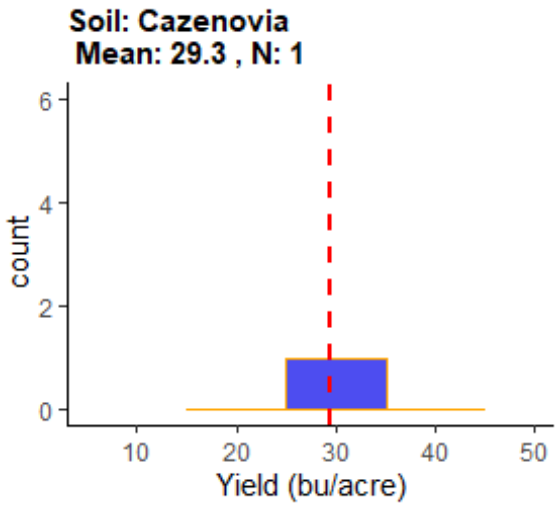
Field	Soil type	Predominant soil type	Yield soil type	Area soil type
			bu/acre	acres
Home farm_Flats	Churchville	Churchville	20.1	4.6
Home farm_Flats	Ontario	Churchville	21.6	2.7
Pask_Big Pond field	Odessa	Odessa	24.3	8.9
Pask_David Davis	Canandaigua	Collamer	20.7	0.8
Pask_David Davis	Collamer	Collamer	29.2	6.3
Pask_David Davis	Niagara	Collamer	25.3	5.7
Pask_Lean-to	Churchville	Odessa	25.1	1.0
Pask_Lean-to	Odessa	Odessa	26.4	1.1
Paul Gillette_Allis East	Churchville	Churchville	15.2	7.4
Paul Gillette_Allis East	Odessa	Churchville	17.0	2.6
Paul Gillette_Allis East	Hilton	Churchville	36.6	1.4
Rowcliffe_Back Field	Niagara	Niagara	30.1	3.0
Rowcliffe_Front	Odessa	Odessa	39.7	13.3
Rowcliffe_Front	Niagara	Odessa	38.4	1.5
Rowcliffe_Front	Cazenovia	Odessa	29.3	0.8

Appendix III.

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




Soil: Hilton
Mean: 36.6 , N: 1
count
0
2
4
6
10
20
30
40
50
Yield (bu/acre)


Soil: Cazenovia
Mean: 29.3 , N: 1
count
0
2
4
6
10
20
30
40
50
Yield (bu/acre)