Swede 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 20 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, 382 acres were analyzed in 2019, based on the whole field dataset that we received. Once headlands were removed, 277 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 58.7 bu/acre (whole fields including headlands) and 62.5 bu/acre (whole field excluding headlands). Yield on a per field basis ranged from 34.2 to 76.5 bu/acre for WF and from 34.7 to 78.3 bu/acre for WFNH.

Table 1: 2019 Soybean grain yield (bu/acre) and area summary for the whole farm. Area weighted averages across 20 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	58.7	382	62.5	277	-3.8	105

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
Lowe_L402		61.6	24.2	67.4	17.1	-5.8	7.0
Lowe_L403		64.1	31.0	67.9	24.8	-3.8	6.2
Lowe_L404a		44.2	21.9	52.0	12.8	-7.7	9.1
Lowe_L410		39.7	1.2	60.0	0.5	-20.3	0.7
Lowe_L413		49.5	15.0	58.8	8.6	-9.3	6.4
205		74.2	7.9	75.5	4.5	-1.3	3.4
207		65.0	12.8	66.5	8.4	-1.5	4.4
208		76.5	12.7	78.3	8.6	-1.8	4.1
209		66.0	16.5	74.9	10.2	-8.9	6.2
219-221		64.8	42.2	66.5	33.8	-1.7	8.5
15a		50.3	10.9	53.2	7.1	-2.8	3.8
15b		38.5	7.4	47.4	4.0	-8.8	3.4
26		49.5	12.3	54.0	10.1	-4.5	2.2
25		35.5	17.4	34.7	13.3	0.7	4.1
28		49.2	10.0	54.4	7.5	-5.1	2.5
401		60.3	34.9	67.7	22.2	-7.5	12.7
402		34.2	14.2	36.1	8.8	-1.9	5.4
53		70.1	43.0	71.6	32.9	-1.5	10.1
Triple H_Cuylerville_211		66.3	25.1	66.9	22.5	-0.6	2.6
Triple H_Geneseo_102		53.1	20.8	53.4	18.9	-0.3	1.9

Appendix II.

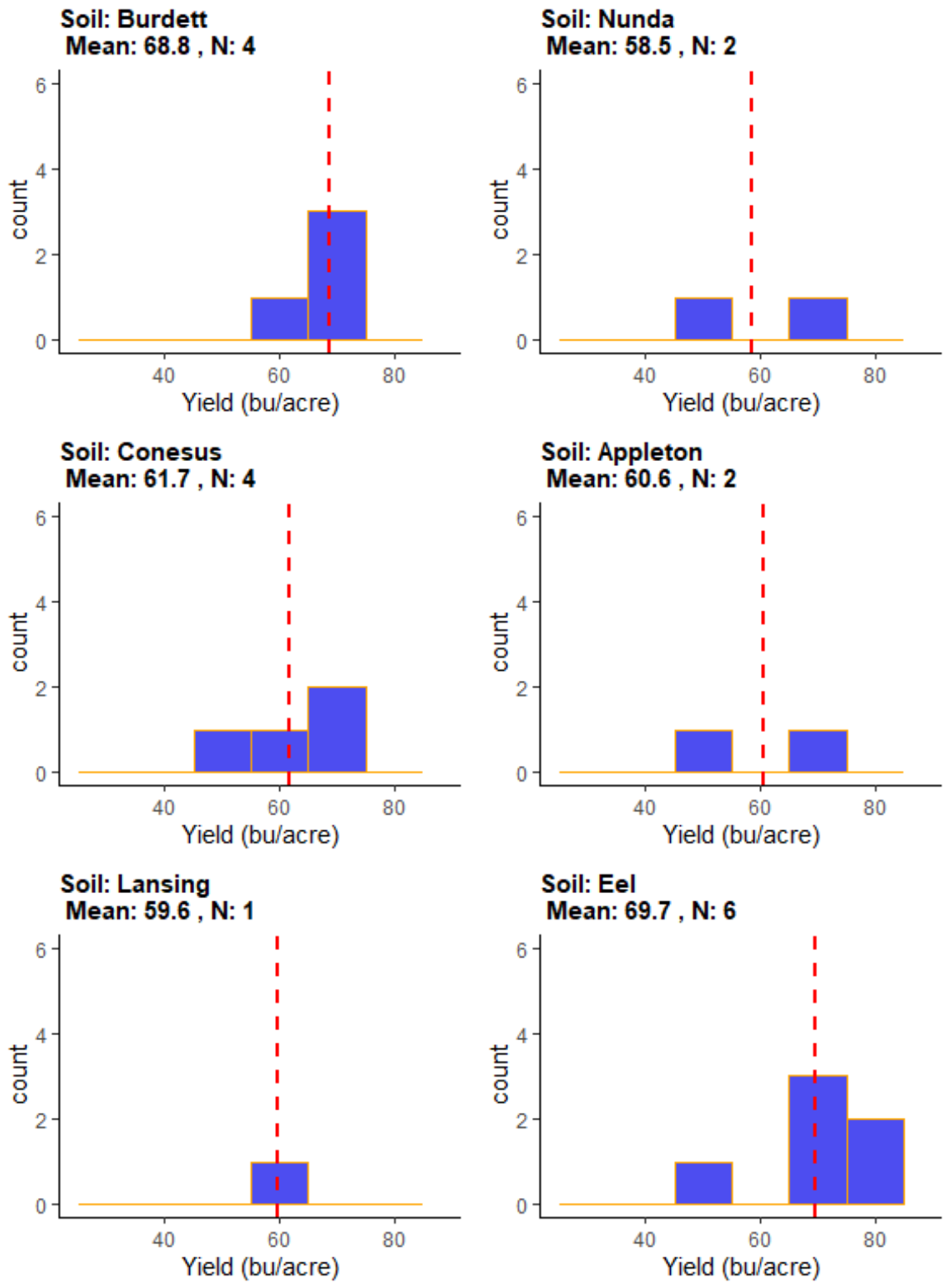
2019 Soybean grain yield (bu/acre) by soil type. Predominant soil type of each field is also listed in the table.

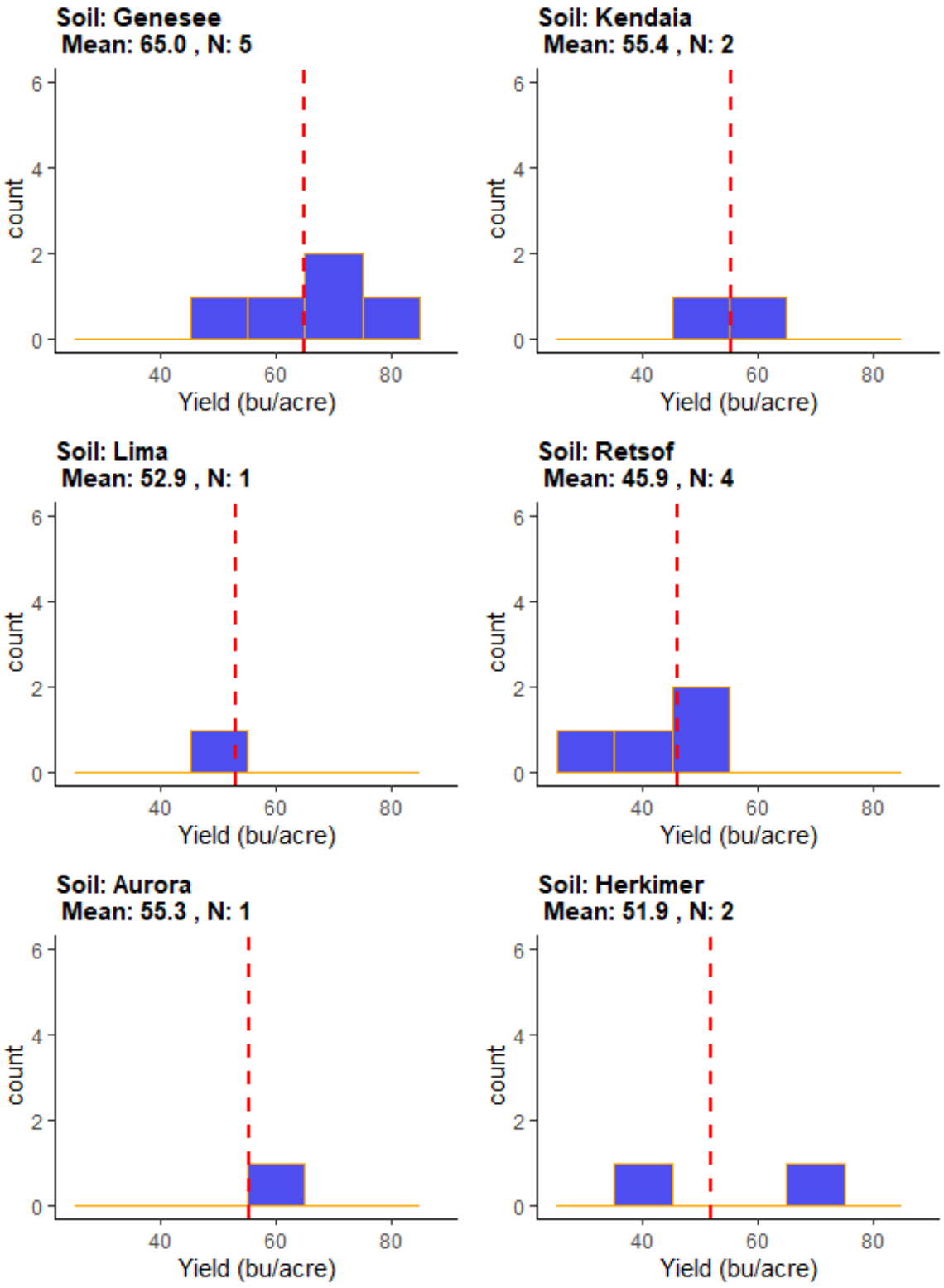
Field	Soil type	Predominant soil type	Yield soil type	Area soil type
			bu/acre	acres
Lowe_L402	Burdett	Nunda	72.3	1.0
Lowe_L402	Nunda	Nunda	67.1	16.1
Lowe_L403	Burdett	Burdett	68.1	13.4
Lowe_L403	Conesus	Burdett	68.0	11.0
Lowe_L404a	Appleton	Conesus	49.6	3.7
Lowe_L404a	Conesus	Conesus	52.1	8.1
Lowe_L404a	Lansing	Conesus	59.6	1.0
Lowe_L413	Burdett	Burdett	60.4	6.5
Lowe_L413	Nunda	Burdett	49.9	0.8
Lowe_L413	Conesus	Burdett	55.3	1.3
205	Eel	Eel	75.5	4.5
207	Eel	Genesee	70.4	4.1
207	Genesee	Genesee	62.8	4.3
208	Eel	Eel	78.5	8.0
209	Eel	Genesee	73.4	1.0
209	Genesee	Genesee	75.1	9.3
219-221	Genesee	Genesee	66.5	33.8
15a	Kendaia	Lima	53.8	2.6
15a	Lima	Lima	52.9	4.4
15b	Kendaia	Retsof	57.0	0.9
15b	Retsof	Retsof	44.5	3.1
26	Retsof	Retsof	51.8	10.1
25	Retsof	Retsof	34.7	13.3
28	Retsof	Aurora	52.6	2.8
28	Aurora	Aurora	55.3	4.2
401	Herkimer	Herkimer	67.7	22.1
402	Herkimer	Herkimer	36.1	8.8
53	Burdett	Conesus	74.3	1.1
53	Appleton	Conesus	71.5	3.6
53	Conesus	Conesus	71.5	28.2

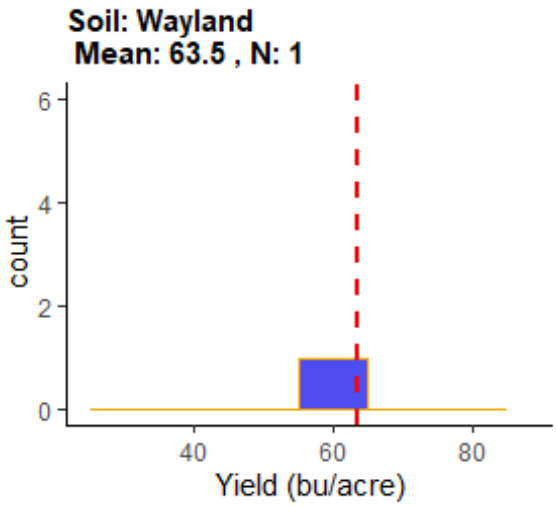
Field	Soil type	Predominant soil type	Yield soil type	Area soil type
			bu/acre	acres
Triple H_Cuylerville_211	Eel	Eel	67.6	13.7
Triple H_Cuylerville_211	Genesee	Eel	67.2	7.4
Triple H_Cuylerville_211	Wayland	Eel	63.5	1.3
Triple H_Geneseo_102	Eel	Genesee	52.6	2.8
Triple H_Geneseo_102	Genesee	Genesee	53.5	15.9

Appendix III.

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




Soil: Genesee
Mean: 65.0 , N: 5
Soil: Kendaia
Mean: 55.4 , N: 2
Soil: Lima
Mean: 52.9 , N: 1
Soil: Retsof
Mean: 45.9 , N: 4
Soil: Aurora
Mean: 55.3 , N: 1
Soil: Herkimer
Mean: 51.9 , N: 2
count
Yield (bu/acre)
0
2
4
6
40
60
80


Soil: Wayland
Mean: 63.5 , N: 1
count
6
4
2
0
40
60
80
Yield (bu/acre)