

# **Toussaints Farms 2018 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.

## 2018 Yield Data Summary

Yield monitor soybean data from 13 fields harvested in 2018 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, 596 acres were analyzed in 2018, based on the whole field dataset that we received. Once headlands were removed, 455 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 50.9 bu/acre (whole fields including headlands) and 53.1 bu/acre (whole field excluding headlands). Yield on a per field basis ranged from 37.8 to 64.9 bu/acre for WF and from 40.5 to 67.1 bu/acre for WFNH.

Table 1: 2018 Soybean grain yield (bu/acre) and area summary for the whole farm. Area weighted averages across 13 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
2018	50.9	596	53.1	455	-2.2	141

*Appendix I.*

2018 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
Allis_A_4_3_2		51.4	83.0	54.2	63.6	-2.7	19.4
Axtel_A1		53.4	32.2	52.6	22.3	0.7	9.8
Axtell_A4		50.7	32.4	54.4	21.0	-3.7	11.4
Axtell_A6_ALF		49.5	25.3	51.6	19.7	-2.1	5.6
Carlton_cardone		54.2	72.7	56.4	60.0	-2.2	12.6
H3		63.9	23.5	65.3	17.8	-1.3	5.7
Home_D_C		48.4	47.5	50.4	43.3	-2.0	4.1
Home_H12		53.2	46.6	55.1	35.1	-1.9	11.5
Home_H15		37.8	71.3	40.5	52.4	-2.6	18.9
Home_H16		43.1	35.8	44.4	25.1	-1.3	10.7
home_H19		51.0	68.8	54.4	52.2	-3.5	16.6
Home_H6		64.9	40.2	67.1	30.1	-2.2	10.1
Home_H89		54.7	17.1	52.5	12.5	2.2	4.7

*Appendix II.*

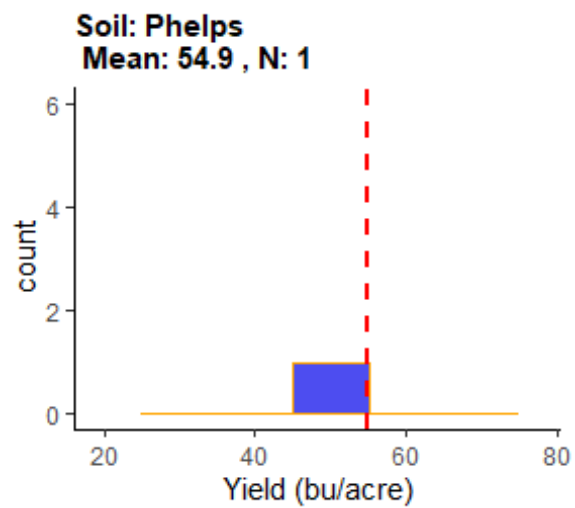
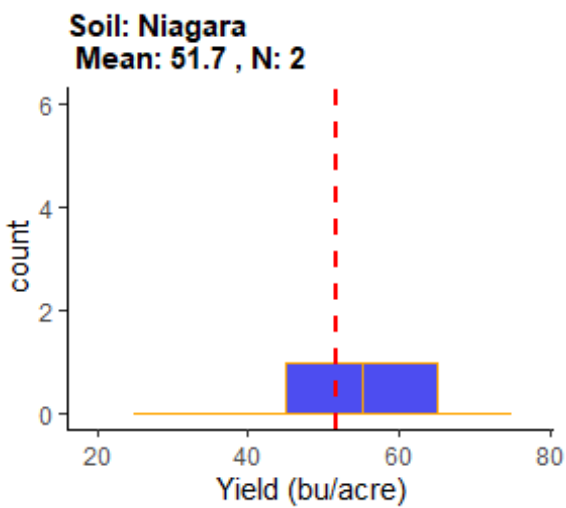
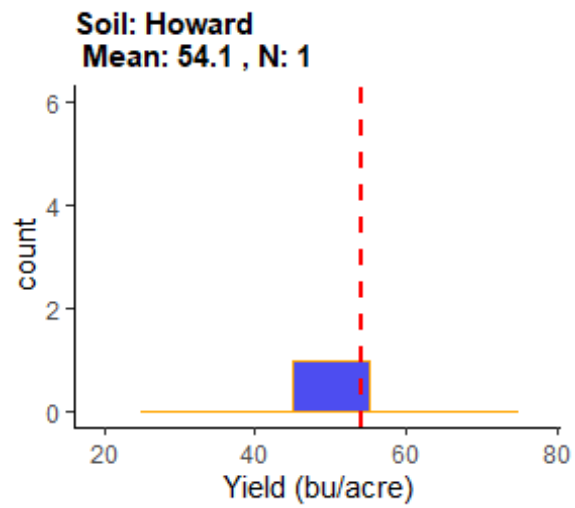
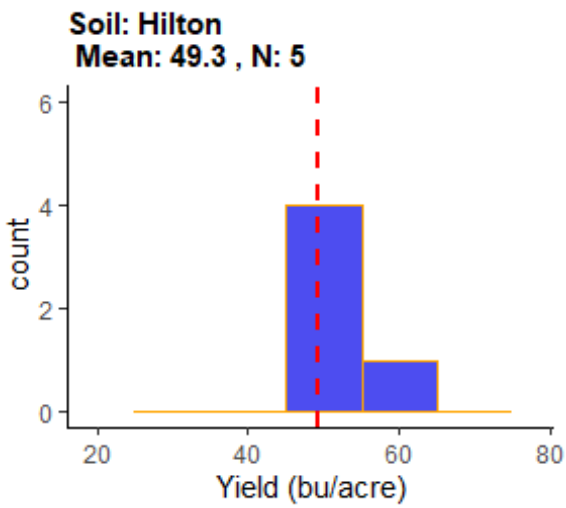
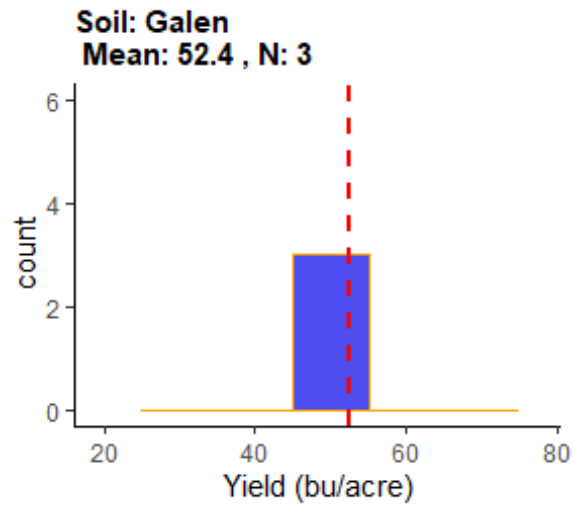
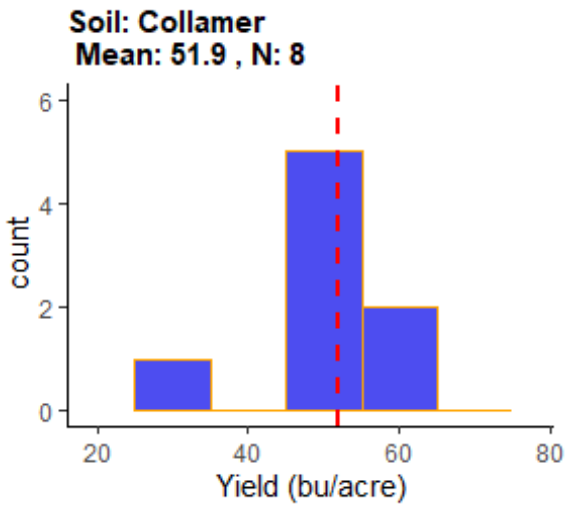
2018 Soybean grain yield (bu/acre) by soil type. Predominant soil type of each field is also listed in the table.

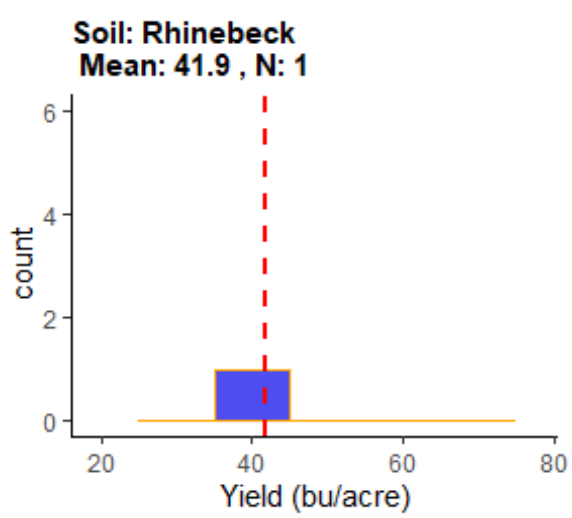
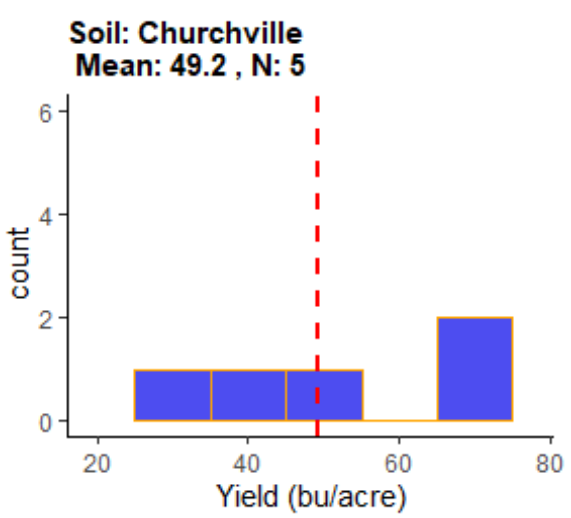
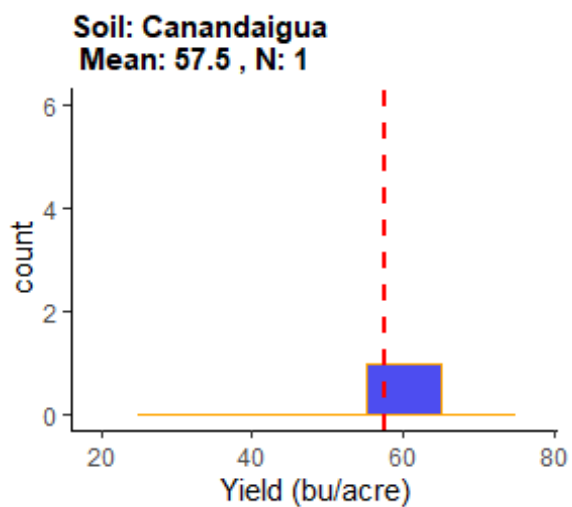
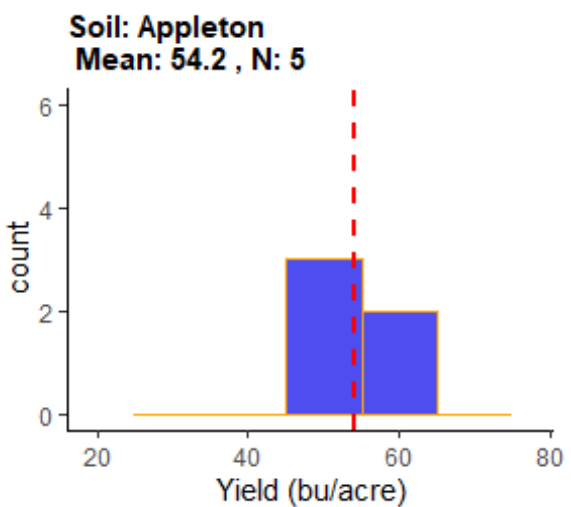
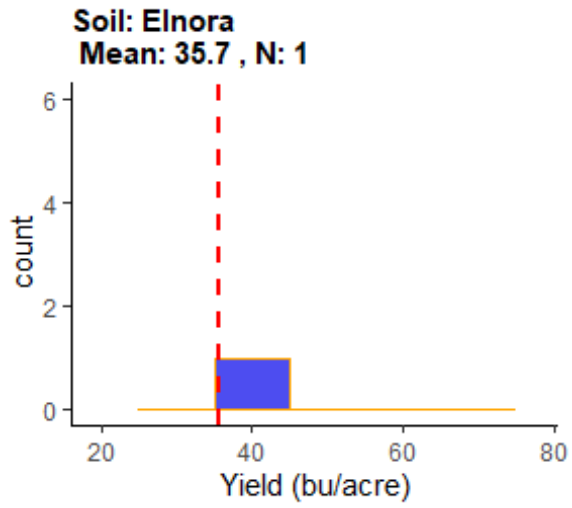
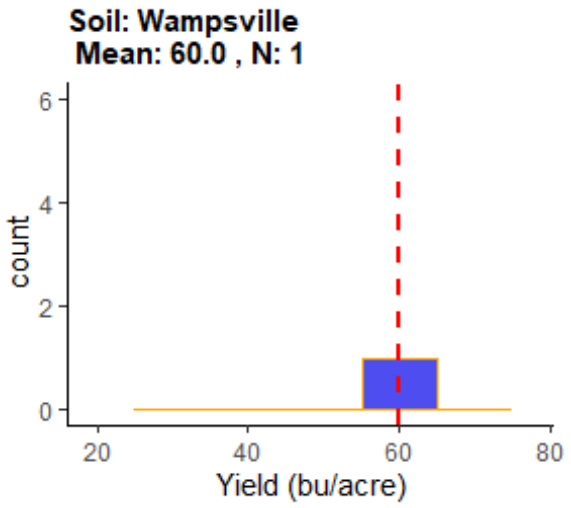
Field	Soil type	Predominant soil type	Yield soil type	Area soil type
			bu/acre	acres
Allis_A_4_3_2	Collamer	Niagara	53.2	19.5
Allis_A_4_3_2	Galen	Niagara	49.7	3.8
Allis_A_4_3_2	Hilton	Niagara	48.6	1.6
Allis_A_4_3_2	Howard	Niagara	54.1	1.0
Allis_A_4_3_2	Niagara	Niagara	55.9	23.6
Allis_A_4_3_2	Phelps	Niagara	54.9	12.7
Allis_A_4_3_2	Wampsville	Niagara	60.0	0.9
Axtel_A1	Collamer	Galen	48.3	3.8
Axtel_A1	Galen	Galen	53.9	18.2
Axtel_A1	Elnora	Galen	35.7	0.4
Axtell_A4	Collamer	Collamer	54.4	20.7
Axtell_A6_ALF	Appleton	Hilton	55.1	4.6
Axtell_A6_ALF	Collamer	Hilton	53.7	2.4
Axtell_A6_ALF	Hilton	Hilton	49.0	11.3
Axtell_A6_ALF	Canandaigua	Hilton	57.5	1.4
Carlton_cardone	Appleton	Hilton	58.8	2.5
Carlton_cardone	Collamer	Hilton	32.4	1.0
Carlton_cardone	Hilton	Hilton	58.1	49.2
Carlton_cardone	Churchville	Hilton	45.9	3.5
Carlton_cardone	Rhinebeck	Hilton	41.9	3.8
H3	Churchville	Odessa	65.1	2.9
H3	Lakemont	Odessa	65.3	2.4
H3	Odessa	Odessa	65.5	10.4
H3	Ovid	Odessa	64.2	2.0
Home_D_C	Appleton	Arkport	54.6	1.9
Home_D_C	Arkport	Arkport	40.5	14.0
Home_D_C	Cazenovia	Arkport	56.0	0.7
Home_D_C	Collamer	Arkport	55.1	10.9
Home_D_C	Galen	Arkport	53.6	4.8
Home_D_C	Bombay	Arkport	51.6	7.3

Field	Soil type	Predominant soil type	Yield soil type	Area soil type
			bu/acre	acres
Home_D_C	Massena	Arkport	52.3	3.7
Home_H12	Arkport	Collamer	45.5	1.2
Home_H12	Cazenovia	Collamer	56.1	0.5
Home_H12	Collamer	Collamer	54.9	23.2
Home_H12	Madrid	Collamer	42.5	0.7
Home_H12	Alton	Collamer	53.6	9.2
Home_H15	Cazenovia	Churchville	39.0	3.8
Home_H15	Niagara	Churchville	47.4	8.1
Home_H15	Churchville	Churchville	29.0	16.8
Home_H15	Odessa	Churchville	44.0	15.3
Home_H15	Ovid	Churchville	50.6	8.5
Home_H16	Appleton	Churchville	48.7	0.6
Home_H16	Cazenovia	Churchville	42.2	1.9
Home_H16	Hilton	Churchville	45.3	5.3
Home_H16	Churchville	Churchville	40.0	10.5
Home_H16	Ovid	Churchville	48.8	6.4
home_H19	Appleton	Appleton	53.7	40.9
home_H19	Hilton	Appleton	45.5	2.7
home_H19	Ovid	Appleton	61.9	8.0
home_H19	Lyons	Appleton	47.6	0.5
Home_H6	Churchville	Odessa	65.8	9.8
Home_H6	Odessa	Odessa	67.6	20.2
Home_H89	Collamer	Collamer	63.5	7.1
Home_H89	Bombay	Collamer	38.0	5.4

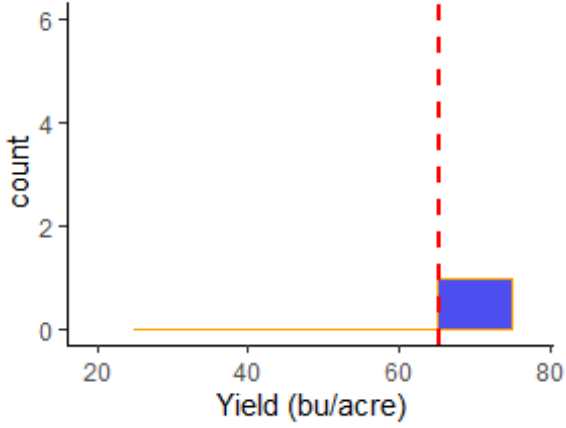
Appendix III.

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

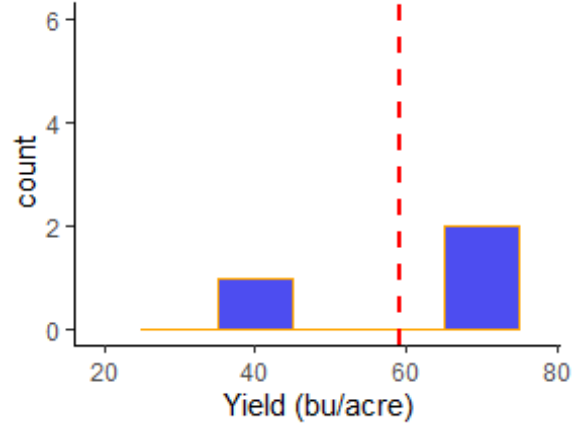




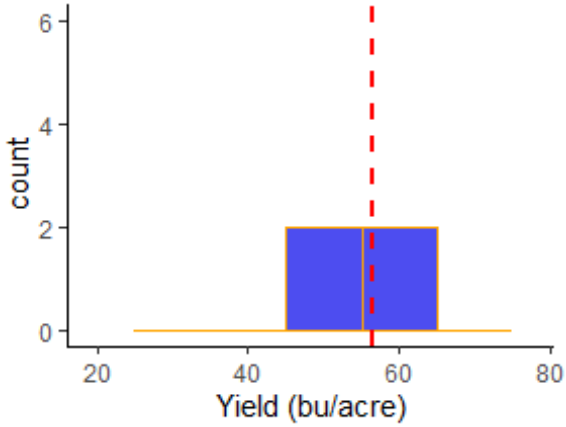
**Soil: Lakemont**  
Mean: 65.3 , N: 1



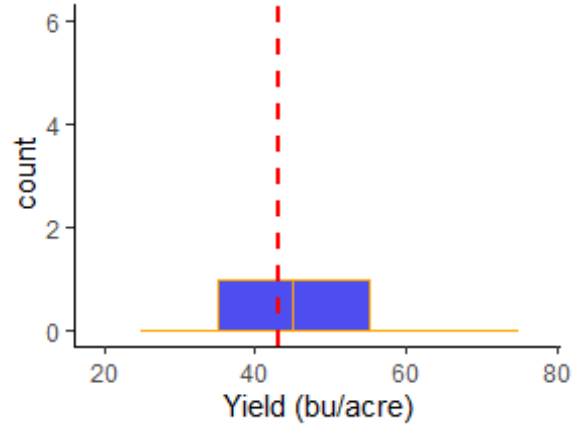
**Soil: Odessa**  
Mean: 59.0 , N: 3



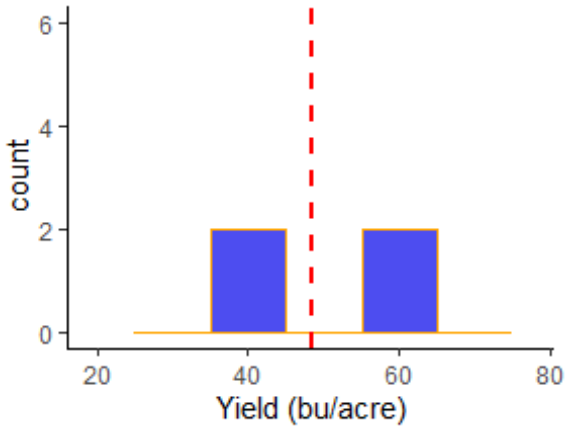
**Soil: Ovid**  
Mean: 56.4 , N: 4



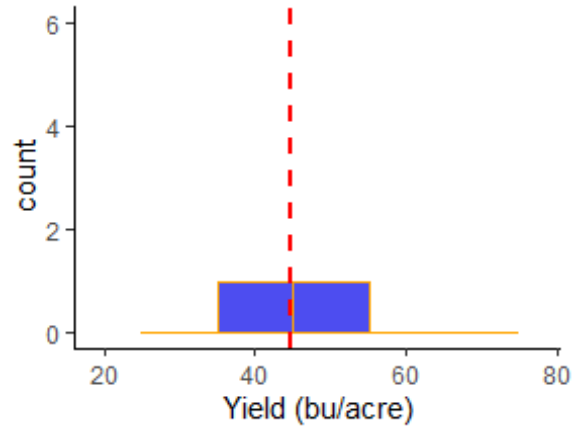
**Soil: Arkport**  
Mean: 43.0 , N: 2



**Soil: Cazenovia**  
Mean: 48.3 , N: 4

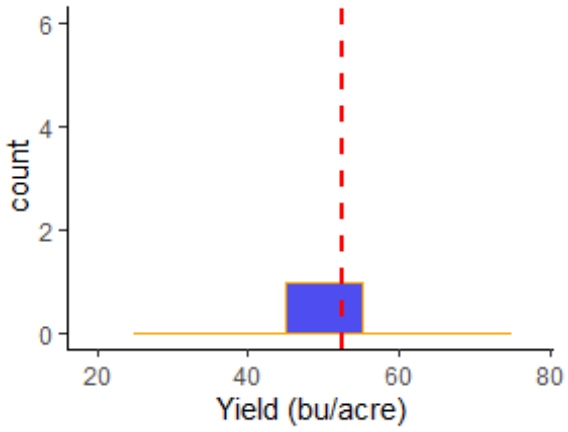


**Soil: Bombay**  
Mean: 44.8 , N: 2

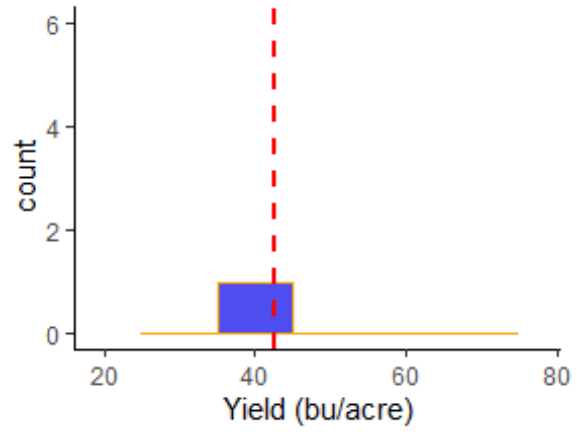




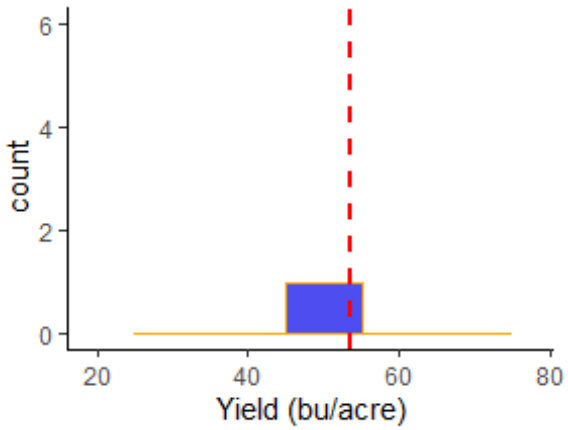
**Soil: Massena**  
Mean: 52.3 , N: 1



**Soil: Madrid**  
Mean: 42.5 , N: 1



**Soil: Alton**  
Mean: 53.6 , N: 1



**Soil: Lyons**  
Mean: 47.6 , N: 1

