

highest yield, while at Almira InVigor L233P had the highest yield. In addition to yield plant count, pod count, and nutrient concentration data were collected. Each of these data was spatially referenced in order to assess the variability across the field.

Table 1

	Almira	Davenport		Pullman
BY5545 CL	854 b	1117 d	-	-
DynaGrow DG200CL	854 b	1259 bcd	-	-
InVigor L233P	947 a	1217 cd	-	-
NCC101S	819 b	1678 a	-	-
Xceed DG X122 CL	781 b	-	-	-
BrettYoung 6080 RR	-	-	1120 d	1741 a
DynaGrow DG540 RR	-	-	1200 cd	1697 a
HyClass 930 RR	-	-	1445 b	1680 a
Star 402 RR	-	-	1369 bc	1730 a
Mean	851	1301		1712
CV (%)	7.0	11.9		26.2
LSD	90	227		692



Plant Density Variation Within Large Scale Variety Trials

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In addition to collecting yield data, large-scale variety trials can be utilized to collect a variety of other data including plant density. During the summer of 2019 plant counts were collected at all three of the large-scale variety trial locations. Because the plot length and width varied at each location depending on the drill being used, and the size and shape of the field which the trials were

established in, each location had a slightly different sampling scheme. In Almira (plot size 40' x 600') four plant counts were taken for times at 120' beginning 60' into the plot. Similarly, in Pullman (plot size 30' x 500') four plant counts were taken four times at 100' intervals resulting 16 counts per plot beginning 50' into the plot. However, at Davenport (plot size 15' x 400') four plant counts were only taken three times at 100' intervals resulting in 12 counts per plot. In total, 320, 256, and 384 plant counts were

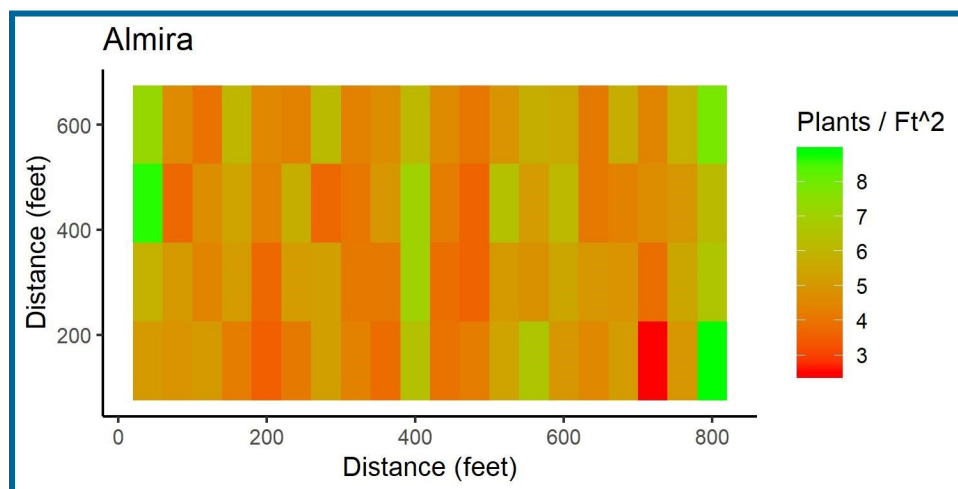


Figure 1. Aggregated plant counts varied from 2.5-8.8 plants per square foot at Davenport, WA.

collected at Almira, Pullman, and Davenport respectively. The number of plants ft-2 varied greatly between location. The highest and the lowest plant counts were found at Davenport ranging from 0.0-15.6 plants ft-2. Pullman plant counts varied to a lesser degree from 1.1-9.3 plants ft-2. At Almira the plant counts ranged from 1.9-13.4 plants ft-2. The plant counts were aggregated to

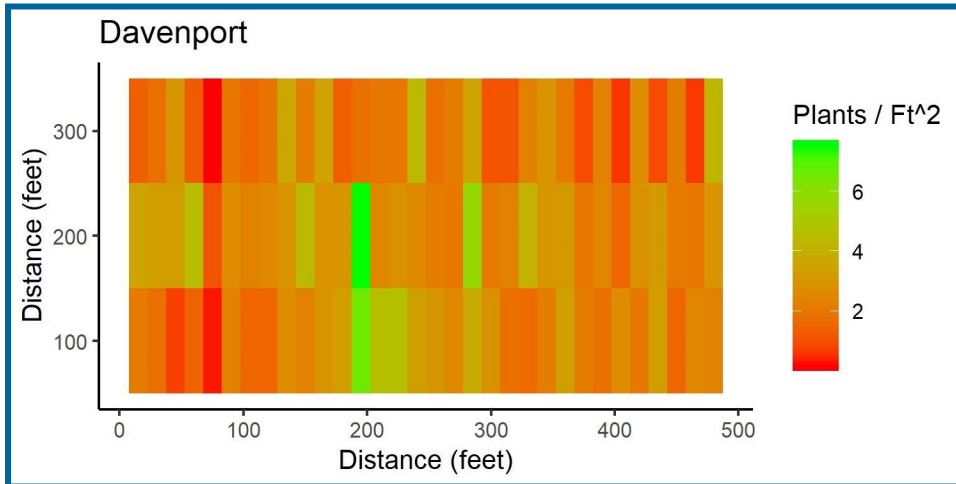


Figure 2. Aggregated plant counts varied from 0.7-7.5 plants per square foot at Davenport, WA.

four counts per plot and mapped to the plots using R statistical software (Fig. 1-3). The maps of plant counts demonstrate the large range of variability across a single field. However, when compared to yield on a plot by plot basis the plant counts did not predict yield within a single location or between any of the locations (Fig. 4). The lack of correlation between plant density and yield demonstrates, high plant densities are not necessarily

required for good yields. However, benefits such as competition against weeds may be gained through higher plant density. Future work will focus on linking the yield monitor data from these locations to the plant count data in order to look at relations between plant count and yield at a higher spatial resolution.

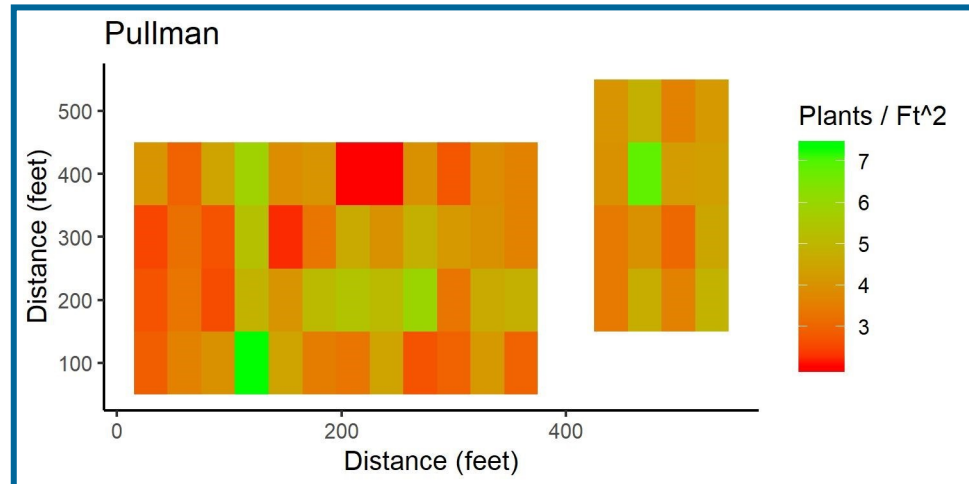


Figure 3. Aggregated plant counts varied from 2.0-7.3 plants per square foot at Davenport, WA.

Pod Count Variation Across Large-Scale Variety Strip Trials



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In addition to collecting yield data, large-scale variety trials can be utilized to collect a variety of other data including pod counts. The pod count on the leading stem of a canola plant has been anecdotally correlated with yield. In this project we set out to assess the possible correlations between pod count and yield data. When the plants were at physiological maturity pod counts were taken at 16 points within each plot (Fig. 1). Of the 8 varieties grown at Davenport and the 5 varieties planted at Almira, there were four shared varieties. A comparison of the shared varieties across both locations showed that Davenport averaged a higher pod count (39) than Almira (32). In Almira, the pod counts varied from 13-53 pods and at Davenport the pod count ranged from 12-60. The average yield in Almira was 851 lbs/A and the average yield in Davenport was 1301 lbs/A. Although a strong correlation between pod count and yield was not achieved when conducting linear regression ($R^2=0.43$), a positive trend between pod count and yield was observed. At neither location did the highest yielding variety (NCC101s at Davenport and InVigor L233P at Almira) have the highest number of pods. The total number of pod counts collected at



Figure 1. Example of pod count data being collected at Almira in 2019.