

FALL AGRONOMIC MANAGEMENT OF BIENNIAL CANOLA FOR WINTER SURVIVAL

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Hypothesis

- We proposed to mitigate canola winterkill through fall management by deficit irrigation and nutrients (potassium) applied prior to planting. Prosser and Othello can provide contrasting environments.



Two-year study at Prosser and Othello

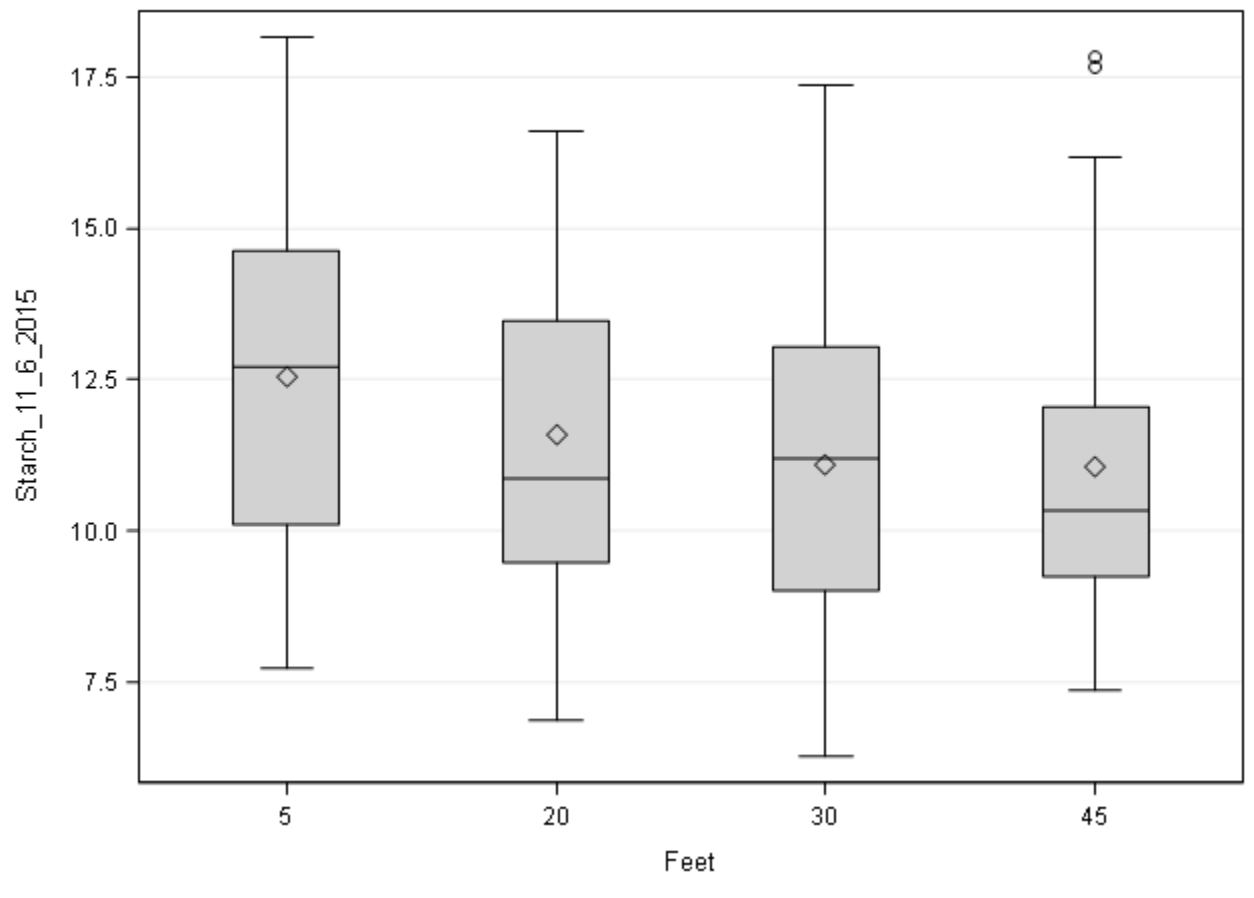
1. Field sites followed winter wheat
2. Stratified soil sample to four feet by replication in mid-August
3. Apply and incorporate N at 100 and 200 pounds per acre; K at 0, 100, 200 and 400 pounds per acre
4. Plant RR winter canola in late August /early September
5. Establish four irrigation lines after planting in line source arrangement
6. After early rosette stage the outside lines were removed leaving only the two center line spaced on 20 foot centers.
7. Five canola roots were dug at 5, 20, 30 and 45 feet from field edge in early November, washed, bagged, weighed and oven dried. This was repeated in late March then all samples ground and sent to Dairyland Labs for starch and free sugar analysis.
8. Canola was harvested for grain at same distances where roots were dug.
9. Data analyzed as randomized block design with four reps.



Preliminary Starch Concentrations

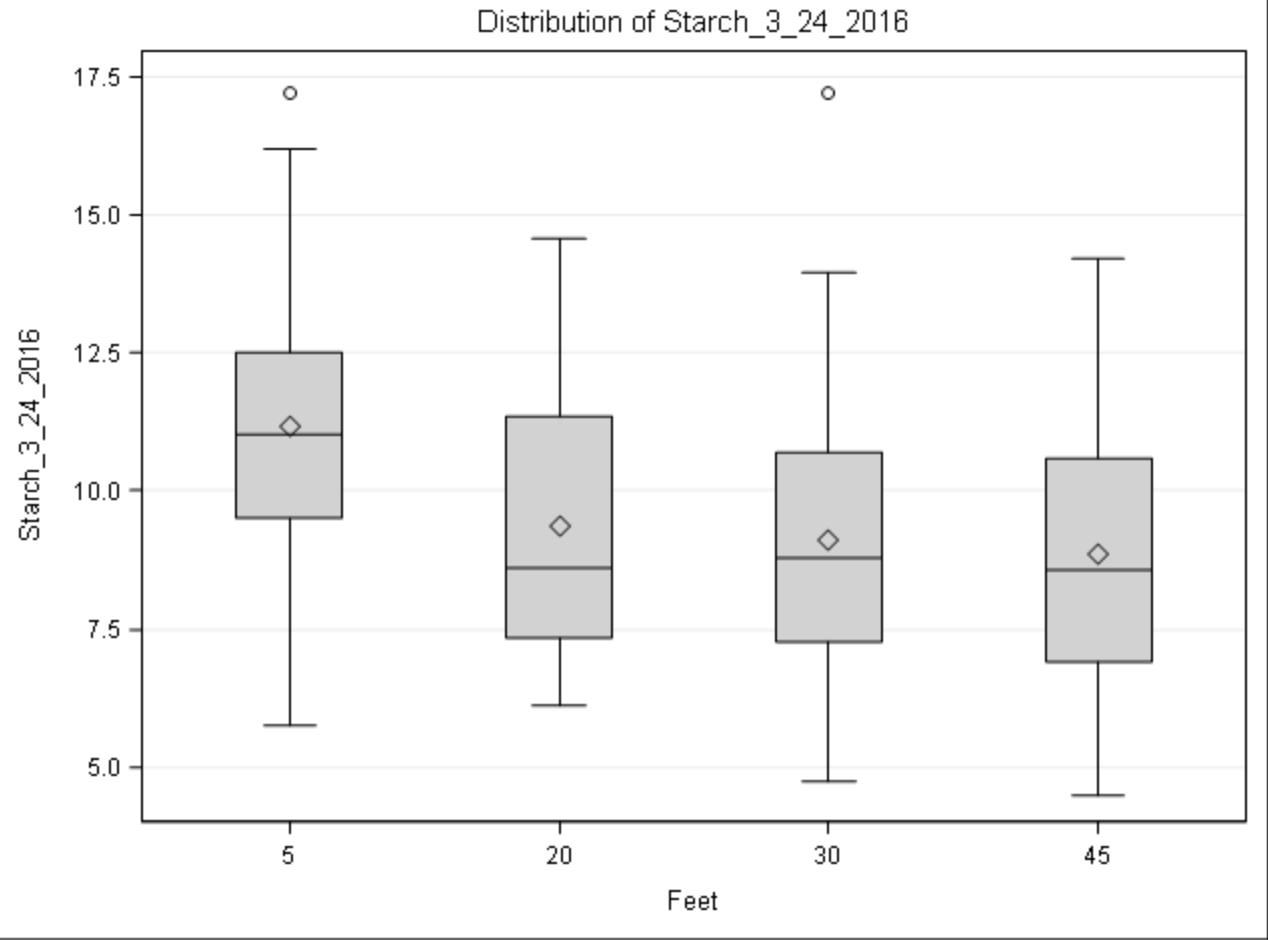
Higher starch further away from water source (5 feet) with limited water applied. Free glucose was less than 1% for all distances.

Distribution of Starch_11_6_2015



Preliminary Starch Concentrations

Reduce in canola root starch in spring compared to fall but trends were similar to fall concentrations. Free glucose less than 1% concentrations.



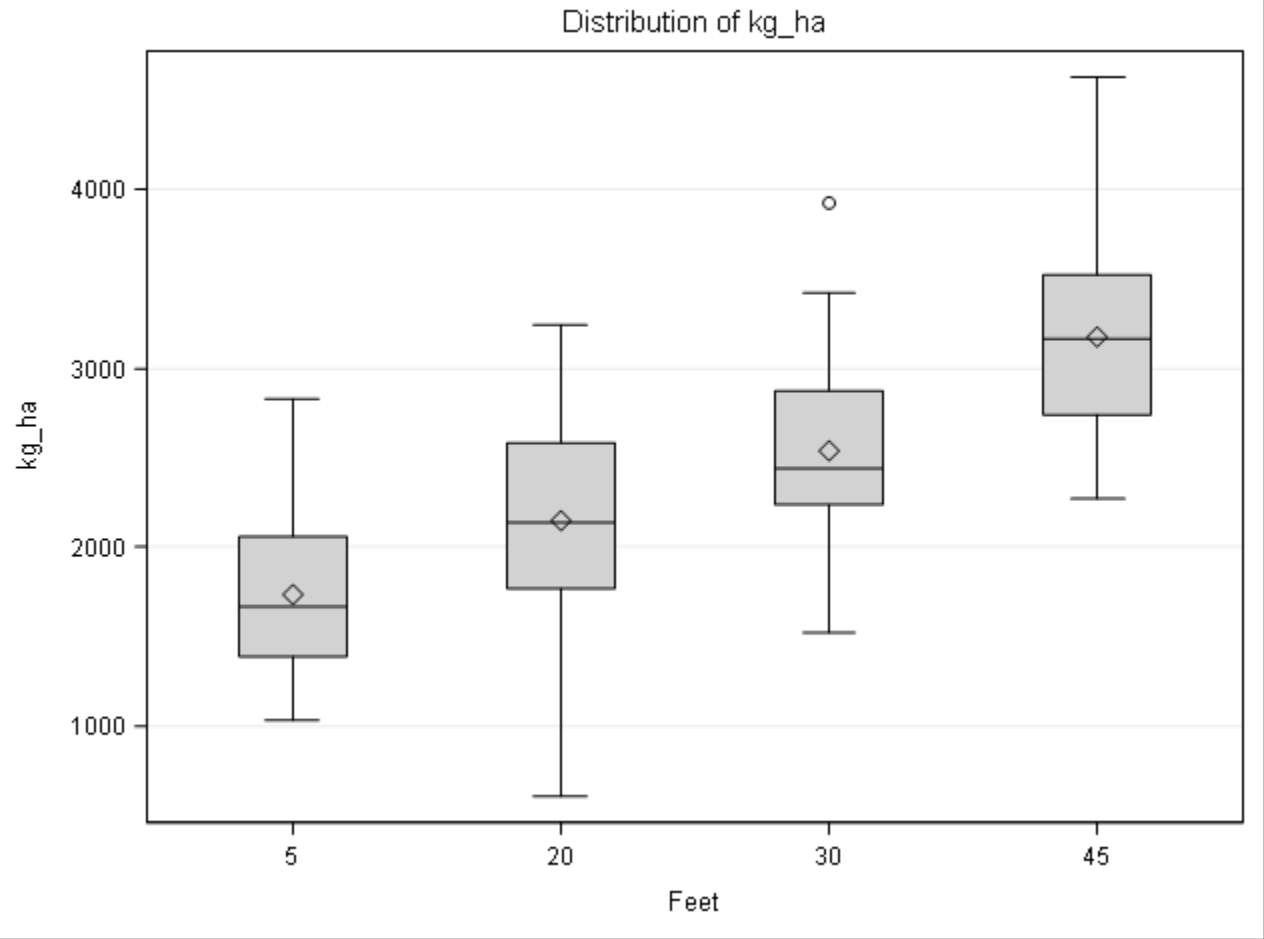
Preliminary Starch by Nutrients

1. **Fall canola roots had higher starch for 200N:100K followed by all 100 pound N rate and three K rates.**
2. **Higher fall N rate at 200N generally reduced root starch concentrations.**
3. **Spring canola roots had higher starch for all 100N potassium treatments than 200N rate.**



Preliminary Grain Yields

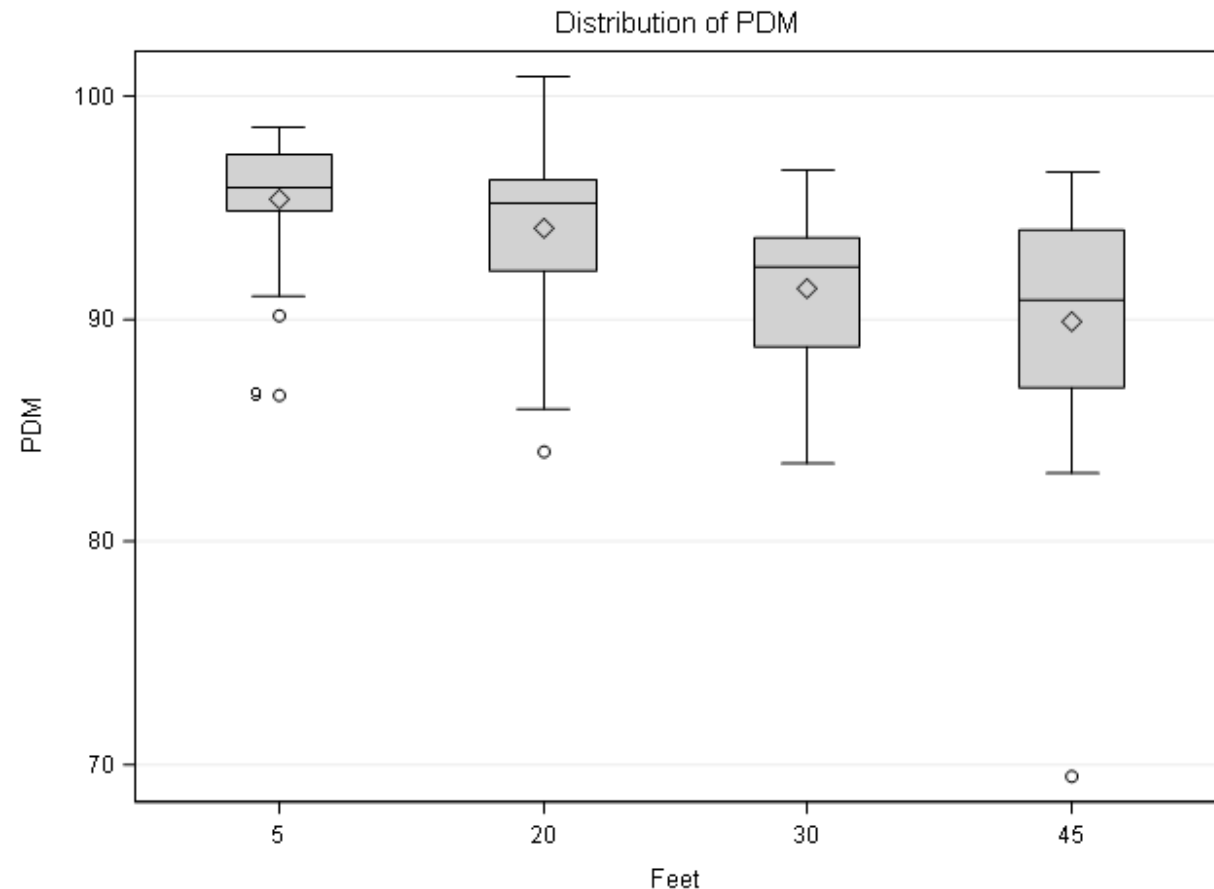
Higher canola grain yields with higher irrigation water applied. No difference in grain yield by fertilizer rates.



Percent DM and Trash in Harvested Grain Samples from Hege Combine

Feet	% Trash
5	33.1
20	32.9
30	28.7
45	22.2
LSD	4.1

High percentage of trash and differs by distance.



2015-2017 Winter Survival Study

Canola roots dug on November at Othello and Prosser and in again in March. Crops were harvested for grain in July but Othello site was lost due to crew not following our instructions. We have continued the Prosser site and will collect spring roots samples in March and grain harvest in July. Trash in grain samples could inflate actual yields.

