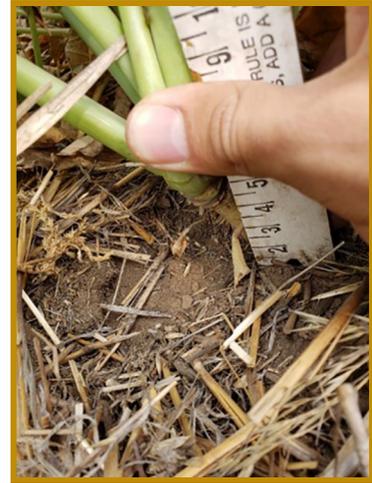


## Foliar Applied Plant Growth Regulators as a Method for Improving Winter Canola Winter Survival



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Plant growth regulators are used in agriculture to manage plant size throughout the growing season. In eastern Washington, winter canola production is stymied by planting date decisions. Early planted winter canola can experience crown elongation during the fall which increases its susceptibility to winter kill while late planted water may lack the moisture establish a good stand. By adding a plant growth regulator treatment to early planted winter canola, we hypothesized that the plant growth regulator would reduce the crown height of canola plants and increase winter canola survival rates. Experiments were conducted at Ritzville, Davenport, and La Crosse during the fall of 2020. The planting dates were June 28<sup>th</sup>, July 10<sup>th</sup>, July 26<sup>th</sup>. Split and single rate applications of plant growth regulator were applied, with the first application occurring at the 4 to 6 true leaf stage and the second application being applied in late August. We staked individual plants to track plant specific responses and collected measurements between October 26<sup>th</sup> and November 4<sup>th</sup>. These measurements included crown height, crown width, plant canopy width, and leaf count. The following spring, these plants were evaluated for survival between March 8<sup>th</sup> and April 7<sup>th</sup>. While crown height has a significant impact on winter survival (Fig. 1), we did not discover significant evidence at most sites that the plant growth regulator application decreased crown height. However, we achieved a significant decrease of the crown height at a trial in Lacrosse (Fig. 2). From the preliminary data it appears that there is a complex relationship between plant density, planting date, and PGRs which affect crown height and winter survival. Further research is being planned to experiment with dosage rates and timing of the plant growth regulator application to discover the potential of plant growth regulators in winter canola production.



Measuring the crown height of a winter canola plant.

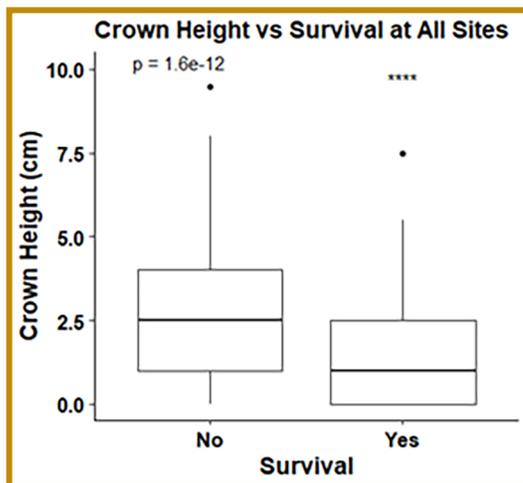


Figure 1. Significant evidence was found that a shorter crown height improves winter survival probability.

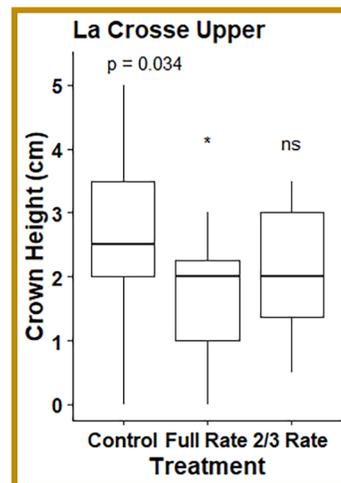


Figure 2. A significant decrease in the crown height of canola receiving a full rate of plant growth regulator at Lacrosse was found.