

**WASHINGTON OILSEEDS COMMISSION
PROGRESS REPORT FORMAT FOR 2019 PROJECTS**

Project No.:

Title: Winter Canola Stand Establishment and Winter Survival

Personnel: Isaac Madsen, Ph.D. (PI)

Reporting Period: October 2019 - October 2020

Accomplishments:

Two lab experiments examining canola root growth were conducted during 2020. The first experiment compared the root growth of six different canola varieties. The second experiment analyzed the effect of an in-furrow wetting agent on germination and root growth. While both experiments have been completed, the data has not been analyzed. The decrease from six lab experiments conducted in 2019 to two in 2020 is largely due to difficulties of training undergraduates to conduct lab experiments while maintaining social distancing protocols. Due to the difficulties associated with conducting in lab experiments, we have increase our focus on assessing stand establishment in the field and winter survival in the field. We now have two years of stand count and yield data in spring canola and one year of data relating stand count to yield in winter canola. Additionally, we have stand establishment and winter survival data on the alternative practice of using oats as a companion crop for improved establishment.

Results:

1. **Lab experiments:** (2 in lab experiments measuring root growth were conducted). These included different soil moisture levels, different canola varieties, and the use of an in-furrow wetting agent. The results of these studies have not been analyzed.
2. **Stand establishment counts and winter survival observations:**
 - a. Winter survival data was collected at points established in the fall of 2019. The survival data was collected at oat companion crop trials, in regular production fields, and at grazing trials. The initial results from the oat nurse crop trials collected in 2019-2020 indicate that oat nurse crops may assist with stand establishment, but likely have a deleterious effect on winter survival.
 - b. Spring canola stand counts were taken at the spring 2020 strip variety trials and stand establishment was related to yield. An initial takeaway is that there appears to be varietal difference in emergence and stand establishment when seed size is corrected for. Additionally, in the 2020 spring canola trial in Cloverland, plant counts were frequently below 1 plant/ft² and yields of >2900 lbs/A were achieved.

Publications:

Madsen, I. and Esser A., 2020. Companion Crops as a Method for Improving Winter Canola Stand Establishment and Winter Survival. 2020 Field Day Abstracts. Page 32.

Madsen, I. 2020. Plant Density Variation Within Large Scale Variety Trials. 2020 Field Day Abstracts. Page 17.