

**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: June 2019 - October 2019

Accomplishments:

Six lab incubations testing the feasibility of in-furrow moisture applications and seed imbibing treatments at different moisture levels. These studies have resulted in data which will direct future field based experiments. At one location with low soil moisture imbibed canola seed was planted to test the feasibility of imbibed seed. Additionally winter survival plots were established to assess the effect of nurse crops, variety, and drill design on emergence and winter survival.

Results:

1. **Lab experiments:** (6 in-furrow moisture experiments measuring root growth were conducted). These included different soil moisture levels, different in-furrow moisture treatments, and imbibing seed.
 - a. It was found that no feasible amount of water added to a soil uniformly at permanent wilting point will result germination or emergence.
 - b. However, marginal moisture levels (20% gravimetric moisture, at 1.15 bulk density) showed in furrow moisture treatments ranging from (0-200 gal/A) showed an effect on root growth and emergence.
2. **Imbibed seed small plot study:** The imbibed and non-imbibed seed were planted into dry no-till fallow in Ralson in July of 2019. None of the imbibed seed or non-imbibed seed was able to emerge. Indicating that there is limited utility in planting imbibed seed in the field.
3. **Stand establishment counts and winter survival observations:** Stand establishment and winter survival observation points were established in fields around Eastern Washington in the fall of 2019. These plots were sub plots of variety trials, nurse crop trials, grazing trials, and regular production fields.
 - a. An initial takeaway is that there appears to be varietal difference in emergence and stand establishment when seed size is corrected for.
 - b. Nurse crops (spring oats) planted with canola appear to increase the uniformity of the stand, but does not increase the average number of plants.
 - c. All of these plots will be re-evaluated in the spring of 2020 to assess winter survival under these treatments.

Publications: No publications from the first year.