

Effect of Winter Wheat Row Orientation to Suppress Downy Brome (*Bromus tectorum*) in Northeastern Oregon

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Light is an important resource that crops and weeds compete for. Increased light interception by the crop can be used as a method of weed suppression in winter crops as part of an integrated weed management approach. The effect of row orientation varies with latitude and with the seasonal tilt of the earth in relation to the sun. It is likely that winter crops oriented in the east-west direction could shade weeds in the inter-row spaces to a greater extent than crops oriented north to south. The objective of this study was to examine the effect of winter wheat row orientation to suppress downy brome in the latitude and growth conditions of Northeast Oregon. In agreement with similar works conducted in other parts of the globe, we observed lower downy brome stands and biomass in the winter wheat subplots seeded East-West (compared to subplots oriented North-South) but the suppression effect was not significant and it did not affect downy brome fecundity parameters or crop yield. It appears that manipulation of crop row orientation in winter wheat is not a useful technique to suppress downy brome in Northeastern Oregon.

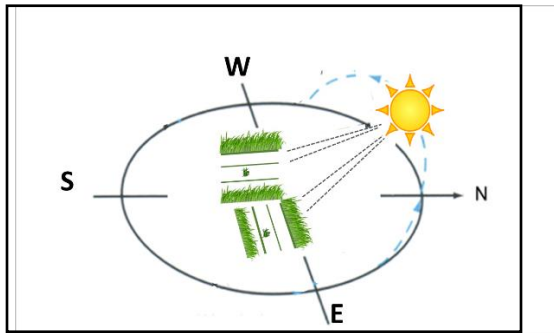


Figure 1: Scheme of the project hypothesis

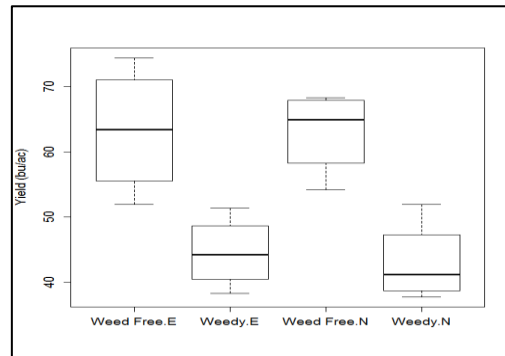


Figure 2: Effect of the crop row orientation and downy brome infestation on the median of winter wheat yield (bu/ac)



Figure 3: General view of the experiment (left) and an Infested subplot (right)

Note: This work was presented as a poster at the PNW direct seed association annual meeting 2016.