

An Analysis of Predictor Variables and Sampling Dates in the Estimation of Crop Yield Loss

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Traditionally, most prediction yield loss models explain yield loss as a function of weed plant density. Other models use relative leaf area of weeds, weed biomass, or percentage of weed cover to predict yield loss. However, which of these variables predict yield loss more accurately is unknown and will depend on several factors like, predominant weed community, water availability, temperature, type of crop, and time of sampling among others. This study is being conducted to test and compare the efficiencies of weed plant density and percentage of weed cover in predicting spring oilseed (*Brassica carinata*) and spring wheat (*Triticum aestivum*) yield losses at different sampling times (early-season, mid-season, and at harvest) in the inland PNW. Weed density and weed percentage of cover were significant predictors of yield loss ($R^2 \leq 0.88$, $P < 0.05$). Weed sampling at mid-season produced the most accurate yield loss predictions. These results indicated that the critical time to control weeds in *B. carinata* might be later than that for spring wheat.



Figure 1: View of one of the plots of the experiment

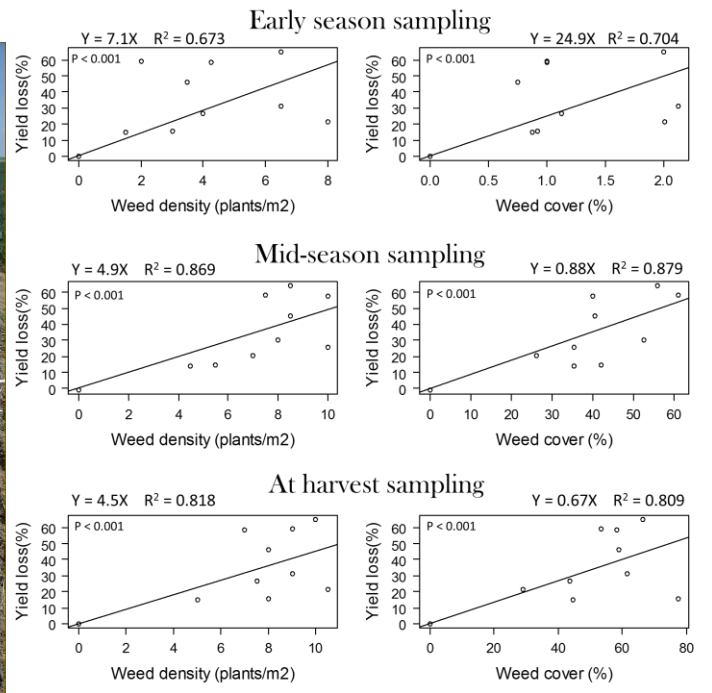


Figure 2: Relationship between weed abundance and yield loss in the different sampling times

Note: This work was presented as a poster at the Western Society of Weed Science (WSWS) annual meeting 2016.