Improving Nitrogen Use Efficiency for Winter Canola Using 4R Stewardship

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Winter canola has potential as an alternative cash crop to wheat when market prices for wheat are low. Canola also has tremendous rotational benefits for soil health, weed and disease control, and the subsequent wheat crop. Careful fertility management is important to ensure maximum yield and quality; however, fertility management research specifically for winter canola production is limited. In fall 2016, we began three nitrogen (N) fertility trials to investigate the optimum rate and timing of N-fertilizer application for winter canola. Trials are established in three areas that represent different yield potentials, soil types, crop rotations, and climatic conditions. Two dryland trials are located near the towns of St. John and Hartline in Washington (WA) State and one irrigated trial is located near Odessa, WA. The primary objectives are to 1) quantify N uptake during the growing season; 2) estimate the optimum rate and timing for N fertilizer for canola grown in different environment with different yield potentials; 3) evaluate how N affects canola yield and oil content. We will also evaluate if chlorophyll meters and aerial imageries are useful tools to estimate plant N status for guiding spring N applications.