

Feral Rye Management in a Winter Canola Production System

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With the introduction of winter canola into the winter wheat/fallow region an opportunity exists for growers to better manage feral rye in their production systems. Winter canola was seeded into conventional summer fallow by cooperating growers in a natural stand of feral rye in early September for experiment one (Bridgeport) and late August for experiment two (Okanogan). Each year glyphosate-resistant winter canola, variety 'Hy CLASS 115W', was planted at approximately 3.4 kg ha⁻¹ with 35-cm row spacing. Our data suggests that the use of split-applied quizalofop in conventional winter canola and glyphosate in glyphosate-resistant winter canola to control feral rye will allow the continued expansion of winter canola in the Pacific Northwest while delaying/preventing weed resistance.

Table 1: Effect of three herbicides on feral rye control, plant density and winter canola yield in 2014 at Okanogan, WA.

^a Abbreviations: F = fall; S = spring. Treatments applied October 10, 2013 and April 10, 2014. ^b Rates are expressed in kg ai ha⁻¹ for clethodim and quizalofop and kg ae ha⁻¹ for glyphosate.

Treatment ^a	Rate ^b	Control of Rye		Rye Density		Canola
		5/12/2014	6/25/2014	6/25/2014	Yield	
	kg ha ⁻¹	%	no. m ⁻²		kg ha ⁻¹	
Nontreated	-	-	136		0	
Clethodim (F)	0.105	70	22		745	
Clethodim (F+S)	0.105+0.105	90	0		745	
Clethodim (S)	0.105	35	106		85	
Quizalofop (F)	0.062	97	0		865	
Quizalofop (F+S)	0.062+0.062	100	0		785	
Quizalofop (S)	0.062	83	14		430	
Glyphosate (F)	0.866	96	0		840	
Glyphosate (F+S)	0.866+0.866	99	0		1040	
Glyphosate (S)	0.866	100	0		350	

Why the Differences in Soil Water Loss During Fallow in the Lind Camelina Cropping Systems Experiment?

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We are currently in year 7 of a 9-year cropping systems experiment to evaluate camelina (C) produced in a 3-year winter wheat(WW)-C-tilled summer fallow (TSF) rotation compared to the 2-year WW-TSF rotation practiced throughout the low-precipitation zone. Experimental design is a randomized complete block with four replicates. There are 20 plots, each 250 ft x 30 ft. Camelina is direct drilled + fertilized into standing WW stubble in late February or early March. Winter wheat is planted into TSF in late August. Soil water content to a depth of six feet is measured in all 20 plots after C and WW harvest in July and again in March, and from the eight TSF plots in late August just before planting WW. Weed species in C and WW are identified, counted, and collected just before grain harvest. Surface residue remaining after planting WW into TSF is measured in both rotations using the line-point method.

Six-year average WW grain yield in the 3-year WW-C-TSF rotation is 37.1 bu/ac versus 39.5 bu/ac in the 2-year WW-TSF rotation (a 2.4 bu/ac or 6% difference). This slight WW yield decline in the 3-year rotation has occurred every year, although there have never been any statistically significant differences in WW yield between the two rotations.