



Eight Years of Camelina Cropping Systems Research at Lind

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There has been strong interest in camelina in the US and around the world during the past ten years due to the unique fatty acid composition of the seed oil for human consumption and the meal for animal consumption. More importantly, the seed oil is valued to produce a low-carbon-emitting fuel for commercial and military aircraft. Camelina is mostly grown as a spring-planted crop with 85 to 100 days from emergence to maturity. Pod shatter is only a minor problem. Camelina seeds are very small; only about 30% the weight of a canola seed.

We initiated a long-term cropping systems experiment at Lind in 2009 to compare a 3-year rotation of winter wheat (WW)-camelina (C)-summer fallow (SF) versus the standard 2-year WW-SF rotation. All phases of both rotations are present each year (total 20 plots in 4 replicates) and individual plot size is 30 x 250 ft.

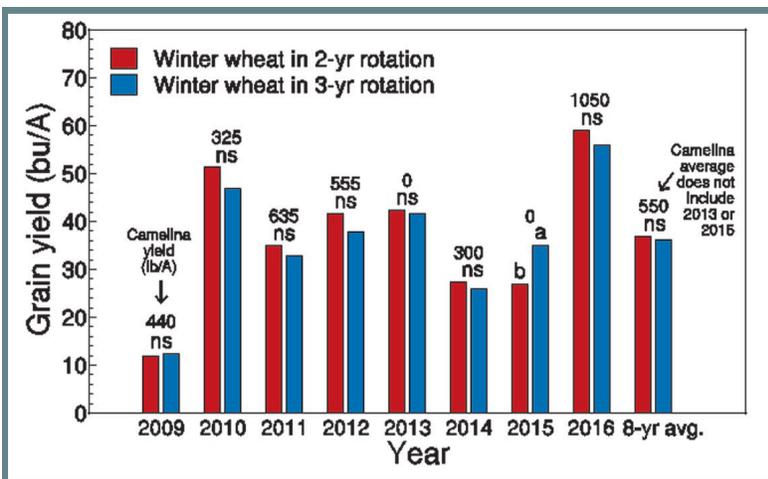


Figure 1. Winter wheat grain yields in the 3-year winter wheat-camelina-summer fallow rotation compared to the 2-year winter wheat-summer fallow rotation during eight years at Lind, WA. Numerical values above the bars are camelina seed yields (lbs/acre).

Camelina is a hardy plant, but is susceptible to frost during the first several days after emergence (cotyledon stage). We had complete loss of camelina stands in 2013 and 2015 due to hard frosts a few days after emergence. Our camelina seed yields have ranged from 300 to 1050 lbs/acre and have averaged 550 lbs/acre (Fig. 1 and Fig. 2). Average winter wheat yields in the 3-year WW-C-SF and 2-year WW-SF rotations are the same (Fig. 1). We have intensively measured soil water dynamics in this experiment and report these findings separately on page 67 of this publication. Several camelina publications from field research conducted in the Inland Pacific Northwest are available on the Washington Oilseeds Cropping Systems (WOCs) website <http://css.wsu.edu/oilseeds/publications>.



Figure 2. Camelina in the Lind experiment on May 25, 2016. This crop produced a seed yield of 1050 lbs/acre.