

Optimizing Fertilizer Application Timing for Winter Canola in Northern Idaho

Jim B. Davis, Megan Wingerson, and Jack Brown
University of Idaho

INTRODUCTION

Two major factors that limit the expansion of winter canola acreage in the Pacific Northwest (PNW)

Soil samples were taken before planting to determine pre-plant available nitrogen, which was approximately 50 lbs. in the top two feet both years. Nitrogen was applied at 160 lbs. per acre to each treatment to bring the total available N for the crop year to 210 lbs. per acre, except for a low nitrogen control that received only 35 lbs. of N at planting for 85 lbs. of total available N per acre. Sulfur and phosphorus were applied with the nitrogen at appropriate levels for the expected yield, using a 50/50 blend by weight of urea and ammonium phosphate-

As expected, the reduced nitrogen treatment resulted in a lower seed yield, but winter survival was not affected. (See Table 2.) Winter survival and seed yield were reduced when all of the recommended nitrogen was applied at planting. The remaining treatments had winter survival and yields that were similar to each other. The only deviation from this pattern was in the 2013-2014 late-planted treatment, where no winter damage was observed with any of the treatments. (Data not shown.) The yield reduction associated with applying all of the nitrogen at planting (160 lbs. N per acre) was so great that the two-year mean yield of that treatment was equivalent to the low nitrogen treatment that received only 35 lbs. of N per acre.

Table 2. Mean seed yield of two canola cultivars with five nitrogen fertility timing regimes grown near Moscow, Idaho in the 2014 and 2015 crop years.

Fertilizer Timing Treatment	Seed Yield			Winter Survival
	2014	2015	Mean	
	----- lbs. per acre -----			-- score ¹ --
Reduced N at Planting Only	1680 a ²			