

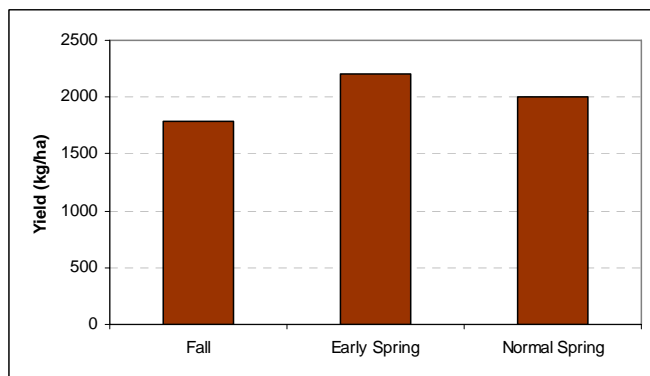
Early spring seeding of canola optimizes canola yield

Research from Agriculture and Agri-Food Canada (AAFC) builds a strong case for seeding canola as early as possible in the spring. Field experiments at Lacombe and Beaverlodge (1999–2001), Didsbury (1999–2000), and Lethbridge (2000–2001), Alberta, evaluated the effect of fall (late October–November), early spring (late April–early May), and normal spring (approximately mid-May) seeding dates on glufosinate- (LibertyLink®), glyphosate- (Roundup Ready®), and imidazolinone- (Clearfield®) tolerant canola development and yield.

In the study, the canola was direct seeded into standing stubble, and managed according to common agronomic practices. In-crop herbicides were applied once at their recommended label rate when the crop was in the two- to five-leaf stage.

Early spring seeding never worse

The researchers found that early spring seeding is a reasonable alternative for canola producers compared to the traditional spring seeding date, but fall seeding produced lower yields and higher dockage. Early spring seeding was sometimes better but never worse than normal spring seeding. Early spring seeding equaled the yield of normal spring seeding at 6 out of 10 site-years, and outyielded normal spring seeding at the other 4 sites.



Mean canola yield response to seeding date averaged across herbicide-tolerant canola cultivars at several Alberta sites.

Note: 1 bu/acre = 56 kg/ha.

Source: Clayton, G. W., Harker, K. N., O'Donovan J. T., Blackshaw, R. E., Dossdall, L. M., Stevenson, F. C. and Ferguson, T. 2004. Fall and spring seeding date effects on herbicide-tolerant canola (*Brassica napus* L.) cultivars. *Can. J. Plant Sci.* 84: 419–430.

Compared to fall seeding, early spring seeding significantly increased yield for 8 of 10 site-years. Early spring-seeded canola had 19% higher seed yield and 2.1% higher oil content than fall-seeded canola.

Lower yields with fall seeding in this study were likely due to a combination of lower plant densities and greater weed interference, as indicated by dockage. Fall seeding resulted in 46% lower plant density and nearly double the dockage than spring seeding.

Fall stand establishment inadequate to support yield

Plant densities were within the recommended range in 5 of 10 site-year for fall seeding, 8 of 10 site-year for early spring seeding, and 9 of 10 site-year for normal seeding. Fall seeding plant densities were typically 30 to 50 percent lower than spring seeding dates.

Mean canola responses to seeding date averaged across herbicide-tolerant canola cultivars and several Alberta sites

Variable	Fall	Early spring	Normal Spring
Yield (kg ha ⁻¹)	1790	2200	2000
Plant density (no.m ⁻²)	48	87	90
Maturity (DOY)	233	237	244
Dockage (%)	1.2	0.7	0.8
Oil content (%)	43.4	44.3	44.6
Protein content (%)	24.7	24.1	24.2

Notes: 1 bu/acre = 56 kg/ha;

Plants/square foot = plants per square metre divided by 10.56;

DOY: Day of Year.

Source: Clayton, G. W., Harker, K. N., O'Donovan J. T., Blackshaw, R. E., Dossdall, L. M., Stevenson, F. C. and Ferguson, T. 2004. Fall and spring seeding date effects on herbicide-tolerant canola (*Brassica napus* L.) cultivars. *Can. J. Plant Sci.* 84: 419–430.

Other key findings include:

- Yield response to seeding date did not differ among herbicide-tolerant cultivars, so cultivar selection does not have to take seeding date into consideration.
- In this study, seeding date did not influence root maggot damage.
- Early spring seeded canola matured 7 days earlier in the year than normal spring seeded canola

The successful adaptation of canola seeded in the early spring, in addition to producing higher yield, can help producers, especially those with large acreages, diversify their field operations by spreading out the workload and introducing operational diversity. Fall dormant seeding canola, though, has lower average yield and is not a viable option for most producers.