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Rafael A. Martinez-Feria
Iowa State University, rmartine@iastate.edu

Keri Jacobs
Iowa State University, kljacobs@iastate.edu

Mary H. Wiedenhoef
Iowa State University, mwiedenh@iastate.edu

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Description

Canola is a productive crop commonly grown in regions outside the Midwestern Corn Belt for its high-quality, edible oil. The oilseed is traded in global commodity markets and its price has seen significant increases during the last decade, primarily due to a steady domestic demand for vegetable oil and strengthening international demand for Canadian canola (1). Findings from our field studies indicate that winter varieties of canola planted in early fall in Iowa (mid-August to early-Sept) have the potential to overwinter and be harvested in mid-July (2). For producers who wish to incorporate alternative crops into their rotation, winter canola may be a good candidate following spring grains (e.g. oats, spring wheat) in a rotation. Yields of winter canola in the U.S. typically range between 0 and 3,600 lb per acre (10 percent moisture) averaging at about 1,900 lb per acre (3).

Canola can be seeded using a small-grain drill (4) or conventional row crop planters with row spacing of 15-30 inches, although decreases in yield from 0-10 percent have been observed for wide row spacing (5). Canola typically uses less nitrogen (N) than corn, and slightly more than wheat. Additionally, split N applications are recommended with about 30-50 percent applied at pre-planting, and the balance top-dressed in the spring. The crop can be harvested by direct combining using a “draper” header, although shattering can cause yield losses. Alternatively, the crop can be swathed and then harvested. Swathing helps to speed up dry down and reduces losses due to windstorms and hail.

Winter canola is not a grass or legume (canola is in the *Brassica* family) and it has a winter annual growing cycle. Thus, including this crop in an Iowa rotation could provide more flexible opportunities to rotate herbicide chemistry and pest control strategies. Moreover, some evidence suggests that *Brassica* species produce chemical compounds that have the potential to control some soil-borne pests and even some weeds (6). Additionally, the winter canola canopy may help to protect soil from erosion during the winter months, and roots can actively take up nutrients, preventing their loss into waterways.

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crop insurance premium costs are assessed based on a determination from an insurer in the private sector. Canola harvest time is expected to be greater compared to soybeans because lower ground speeds are required (~ 2 mph). Therefore, variable costs for direct combining winter canola are assumed to be 30 percent higher than for soybeans. Haul and handling machinery costs are computed based on canola seed yields. These costs do not include costs of storage.

Considerations

A producer pondering winter canola should consider the economic returns to the crop, including expected yields, costs of production and marketing. Winter canola has not been widely used as an alternative crop in Iowa and there are uncertainties regarding its potential in Iowa crop rotations. On average, land values are greater in Iowa than in regions where winter canola is typically grown (i.e. the southern Plains and the Pacific Northwest). Therefore, canola yields higher than the national average are necessary to make winter canola economically competitive with traditional crops. While there is not evidence that winter canola yields in Iowa are greater than the national average, growing conditions in Iowa tend to be more favorable (i.e. greater rainfall and better soils) than in areas where winter canola is typically grown. Finally, though varieties of winter canola are winter hardy, there is a risk of winterkill if winter conditions are too extreme, such as exposure to subzero temperatures without snow cover for several days (13). The canola crop may compensate to some degree of winterkill and still produce acceptable yields, but if spring plant counts are lower than 1-2 plants per square foot, the producer may decide to terminate canola and plant a different crop in the spring.

As with other commodities, the price of canola seed is influenced by global trading. Canola trades on the Intercontinental Exchange (ICE) as rapeseed futures in Canadian dollars per Metric Ton. Thus, when calculating canola prices, the Canadian currency exchange rate should be also taken in account. We recommend looking at the

Oklahoma State University's guide to calculating canola prices (14). Canola seed prices are tied to other commodities, especially to soybeans. During the last decade, canola prices (by weight) have steadily remained around 25 percent higher than soybeans. However, it should be noted that marketing of canola seed in Iowa is not well established, and substantial losses due to transportation costs may be incurred if marketing out-of-state. There are few local buyers for canola oilseed in the state, so finding a potential buyer should be done before planning to grow this crop.

Producers should focus attention to these and other factors when assessing how well winter canola fits their own rotation. We will continue to evaluate this crop, hoping to understand better its potential for Iowa farms.

References

1. Canola Overview [Internet]. United States Department of Agriculture - Economic Research Service. 2012. Available from: www.ers.usda.gov/topics/crops/soybeans-oil-crops/canola.aspx
2. Martinez-Feria RA. Suitability of winter canola (*Brassica napus*) for enhancing summer annual crop rotations in Iowa [MS Thesis]. Ames, IA: Iowa State University; 2015.
3. Assefa Y, Roozeboom K, Stamm M. Winter canola yield and survival as a function of environment, genetics, and management. *Crop Sci* [Internet]. 2014;54(5):2303–13. Available from: www.crops.org/publications/cs/abstracts/54/5/2303
4. Brown J, Davis JB, Lauver M, Wysocki D. Canola growers' manual. U.S. Canola Association; 2008.
5. Godsey C. Evaluation of winter canola grown in 30 inch rows [Internet]. Oklahoma State University Extension. 2012. Available from: canola.okstate.edu/trialresults/Evaluation_of_Winter_Canola_Grown_in_30_inch_Rows_-_Summary.pdf

6. Haramoto ER, Gallandt ER. Brassica cover cropping for weed management: A review. *Renew Agric Food Syst*. 2004 Feb 12;19(4):187–98.
7. Dhuyvetter KC, Brien DMO, Shoup D, Holman J. Canola cost-return budget in south central Kansas (MF2421). www.bookstore.ksre.ksu.edu/pubs/mf2421.pdf. (Accessed 6-July-2016)
8. [Plastina A. Estimated Crop production cost in Iowa - 2016](#) (A1-20): Ag Decision Maker. 2016.
9. Gan Y, Malhi SS, Brandt S, Katepa-Mupondwa F, Kutcher HR. Brassica juncea Canola in the Northern Great Plains: Responses to Diverse Environments and Nitrogen Fertilization. *Agron J*. 2007;99(5):1208–18.
10. International Plant Nutrition Institute. Estimates for Nutrient Uptake and Removal [Internet]. [cited 2015 May 14]. Available from: www.ipni.net/article/IPNI-3296
11. Moechnig M, Deneke D, Wrage L. Weed control in oilseed crops (FS525OS). South Dakota State University Extension. 2010. 1-20 p.
12. Hanna M. Estimating field capacity of farm machines (PM 696). Iowa State University Extension. 2016. p. 1–4.
13. Rife CL, Zeinali H. Cold tolerance in oilseed rape over varying acclimation durations. *Crop Sci*. 2003;43(1):96–100.
14. Bushong JA. How to calculate canola prices [Internet]. Oklahoma State University Extension. [cited 2016 Jul 6]. Available from: canola.okstate.edu/Marketing/

Recommended Reading

Boyles M, Bushong J, Sanders H, Stamm M. Great Plains canola production handbook. Kansas State University Research and Extension; 2012. Available at: www.agronomy.k-state.edu/extension/crop-production/canola.html (Accessed 6-July-2016)

Brown J, Davis JB, Lauver M, Wysocki D. Canola growers' manual. U.S. Canola Association; 2008. Available at: www.uscanola.com/site/epage/102387_956.htm (Accessed 6-July-2016)

Boyles M, Peeper T, Medlin C. Producing Winter Hardy Canola in Oklahoma (PSS-2130). p. 1–4. Available at: pods.dasnr.okstate.edu/docushare/dsweb/Get/Version-7113/PSS-2130web+color.pdf (Accessed 6-July-2016)

Kandel, H. Knodel J. Canola production Field Guide (A-1280). North Dakota State University Extension Service; 2011. Available at: www.ag.ndsu.edu/extensionentomology/recent-publications-main/publications/A-1280-canola-production-field-guide (Accessed 6-July-2016)

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Table 1. Estimated Costs of Production for Winter Canola in Iowa

	Price per unit	Units used	Costs Per Acre
Preharvest Machinery			
Tandem disk	\$6.40/pass	2 passes	\$12.80
Apply bulk fertilizer	\$3.30/pass	1 pass	\$3.30
Apply herbicide	\$4.20/pass	2 passes	\$8.40
Field cultivate	\$5.10/pass	1 pass	\$5.10
Drill	\$8.10/pass	1 pass	\$8.10
Apply spring N fertilizer	\$3.30/pass	1 pass	\$3.30
Seed, Chemical			
Canola seed	\$5.50/lb	5 lb	\$27.50
Fertilizer			
Nitrogen	\$0.40/lb	120 lb	\$48.00
Phosphorus	\$0.45/lb	30 lb	\$13.50
Potash	\$0.35/lb	15 lb	\$5.25
Sulfur	\$0.30/lb	10 lb	\$3.00
Herbicide			
Burndown (Glyphosate)	\$0.20/oz	24 oz	\$4.80
Pre-plant incorporation (Trifluralin)	\$4.85/pint	2 pints	\$9.70
Lime (including application)	yearly cost		\$8.80
Crop Insurance			\$20.33
Miscellaneous			\$10.00
Interest on preharvest variable costs	5.15% for 10 months		<u>\$7.24</u>
Total Preharvest Costs			\$199.12
Harvest Machinery			
Combine	\$24.74/acre	1 acre	\$24.74
Grain cart	\$8.90/acre	1 acre	\$8.90
Haul	\$2.31/acre	1 acre	\$2.31
Handle (auger)	\$1.07/acre	1 acre	<u>\$1.07</u>
Total Harvest Costs			\$37.02
Labor	\$13/hour	2.45 hours	\$31.85
Land Charge	\$266/acre	1 acre	<u>\$266.00</u>
Total Costs per Acre			\$534.00
Total Cost per Cwt.			\$28.11