



Economics of Shorting Canola Rotations

E.G. Smith¹, M.L. Favret², S.A. Brandt³, and H.R. Kutcher⁴

Agriculture and Agri-Food Canada, Research Centres: ¹Lethbridge, AB; ³Scott, ⁴Melfort, SK; ²Lethbridge, AB



Introduction

- Profitability of canola is higher than other crops, such as wheat, in many years
- It is recommended that canola be grown only once every four years in a rotation to manage diseases such as blackleg and weeds
- New canola varieties, including hybrids, have blackleg resistance
- Many canola producers believe that a shorter interval between canola will be agronomically feasible and will be more profitable
- Fungicides might be a profitable option to control plant disease in short-term rotations

Objective

This study determined the net returns from canola production systems with different interval lengths between canola. Net returns were determined for two locations, two canola varieties, fungicide treatment, and four crop rotations.

Materials and methods

- The study was conducted at Scott, SK (1998-2007) and Melfort, SK (1999-2006)
- There were 5 canola rotations, each with two canola varieties (Westar or an Invigor[®] hybrid) and without or with fungicide
 - Continuous canola (C) [1-yr]
 - Canola – spring wheat (C-W) [2-yr]
 - Field pea – canola – wheat (P-C-W) [3-yr]
 - Canola – wheat – field pea – wheat; and canola – wheat – flax – wheat [4-yr]
- Fungicide treatments were applied regardless of the risk potential for disease
- Net returns were budgeted for canola yields from the study, 2007 costs for production inputs, and a 5-yr average canola price of \$318/t.
- The net returns **difference** between the average of the two 4-yr canola rotations and the three shorter rotations were determined for canola
- Statistical tests were used to determine the significance of the differences in net returns for each year

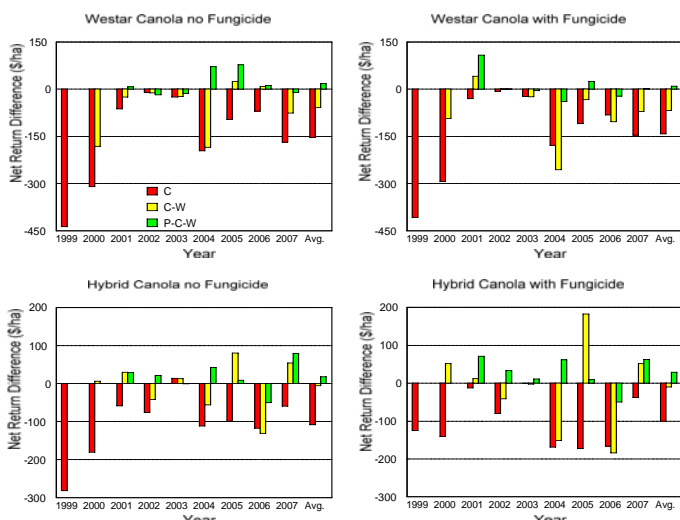


Figure 1. Yearly net return benefit, or cost, of short canola rotations compared to net return from 4-yr rotations at Scott, SK for Westar canola with and without fungicides, and for an Invigor hybrid canola with and without fungicides. (continuous canola (C), canola-wheat (C-W) and field pea-canola-wheat (P-C-W))

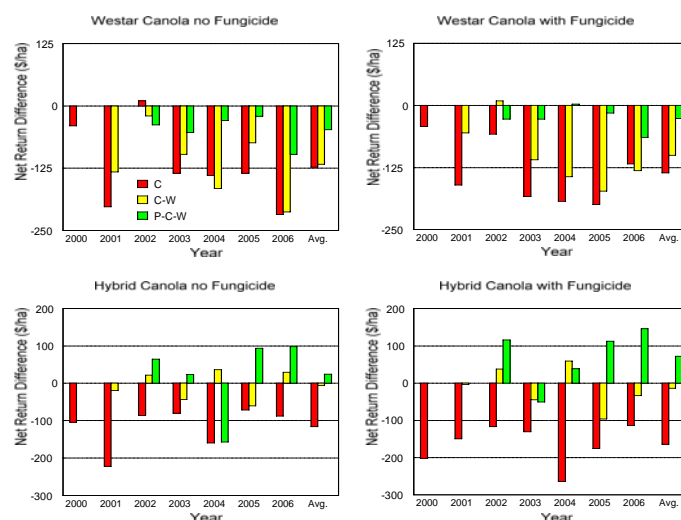


Figure 2. Yearly net return benefit, or cost, of short canola rotations compared to net return from 4-yr rotations at Melfort, SK for Westar canola with and without fungicides, and for an Invigor hybrid canola with and without fungicides. (continuous canola (C), canola-wheat (C-W) and field pea-canola-wheat (P-C-W))

Results

- Net return for hybrid canola was higher than for Westar (data not shown)
- There was no economic benefit of annual fungicide application in this study
- The results were similar when using higher 2008 grains prices

WESTAR

- Net return from canola production was highest for the 4-yr rotation at both locations, regardless of fungicide use
- Continuous canola had the lowest net return

HYBRID

- Net return from canola for continuous canola and canola-wheat rotations were less than 4-yr rotation at both locations and regardless of fungicide use
- Net return to canola for the 3-year rotation was similar to the 4-yr at Scott, but slightly higher at Melfort
- There was a potential advantage to following field pea in a shorter canola rotation

Summary

- Canola producers should not seed canola on canola, or canola every second year
- Annual fungicide application for blackleg control, regardless of disease risk, in short-term canola rotations was not profitable in this study
- There was no economic benefit to a 3-yr, compared to a 4-yr, rotation at Scott site
- There was a small benefit at Melfort to a 3-yr, compared to a 4-yr, rotation with canola following field pea, even though higher blackleg incidence was observed
- Under the conditions of this study, a 3-year rotation interval for canola might be considered for only short durations so that disease incidence does not increase

Acknowledgements

The authors are grateful for the excellent technical support provided by Larry Sproule and Don Gerein at Scott and Colleen Kirkham and Dan Cross at Melfort; and for the crop budgeting assistance of José Barbieri at Lethbridge. Thank you to the Saskatchewan Canola Development Commission (SCDC) and the Manitoba Canola Growers Association (MCGA) for financial support through the Canola Agronomic Research Program of the Canola Council of Canada, the Saskatchewan Pulse Growers and the MII program of Agriculture and Agri-Food Canada.