

# THE IMPACT OF NON-LEGUME COVER CROPS ON FARMERS' PROFIT MARGINS IN ONTARIO

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## MOTIVATION



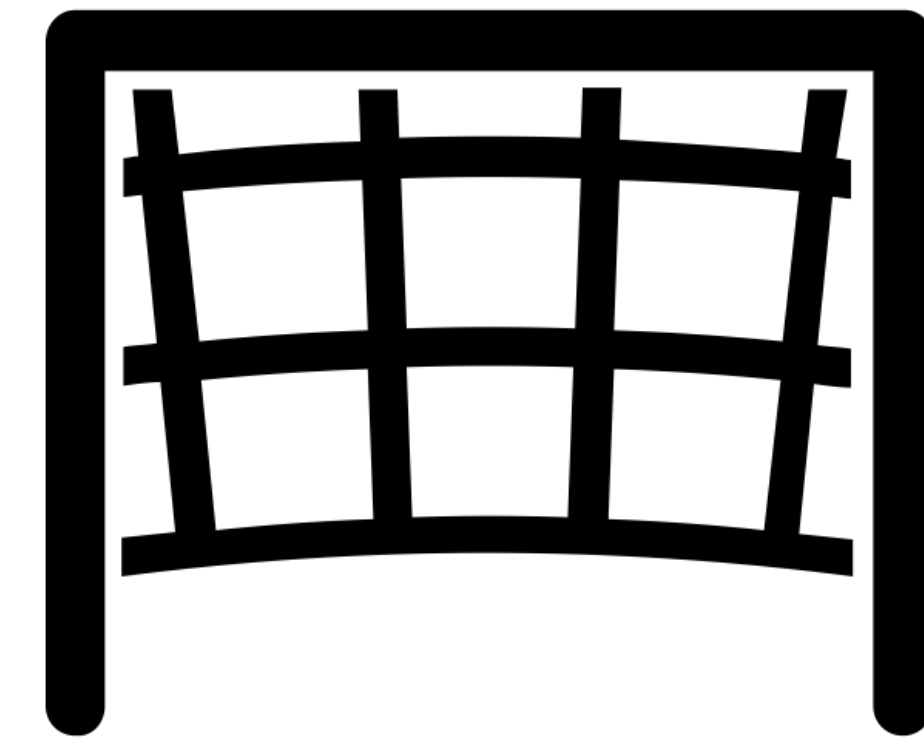
### COVER CROPS

OAT AND RADISH COVER CROPS PLANTED AFTER WINTER WHEAT IN EARLY AUGUST. PHOTO TAKEN MID OCTOBER



### BARRIER

KNOWLEDGE GAP



### GOAL

INCREASE COVER CROPS ON FARMS TO FACILITATE ENVIRONMENTALLY SUSTAINABLE PRODUCTION

## WHY WE NEED EVIDENCE ABOUT COVER CROP EFFECTS ON PROFITS

1. ARE THERE ECONOMIC GAINS TO INCENTIVISE FARMERS?
2. WHAT ARE THE ECONOMIC BARRIERS LIMITING FARMER ADOPTION?
3. ARE POLICY TOOLS ADDRESSING POTENTIAL BARRIERS TO ADOPTION?
4. IS GOVERNMENT SUPPORT NECESSARY?

**WITHOUT KNOWLEDGE OF THE IMPACTS OF COVER CROPS ON FARMERS' PROFIT MARGINS THESE QUESTIONS CANNOT BE ANSWERED AND THE GOAL OF INCREASING COVER CROP USE COULD BE HINDERED**

## RESEARCH METHOD

- ESTIMATED THE EFFECT OF 4 COVER CROPS ON THE PROFIT MARGINS OF 8 MAIN CROPS USING REGRESSION ANALYSIS
- DATA CAME FROM A LONG-TERM COVER CROP EXPERIMENT AT THE UNIVERSITY OF GUELPH RIDGETOWN CAMPUS
- COVER CROPS (CC) – OAT, WINTER CEREAL RYE (RYE), OILSEED RADISH (RADISH), RADISH+RYE
- MAIN CROP ROTATION – SWEET CORN, SPRING WHEAT, TOMATO, GRAIN CORN, SQUASH, SOYBEAN, WINTER WHEAT, TOMATO (2)

### PROFIT MARGIN RATIO EXAMPLE

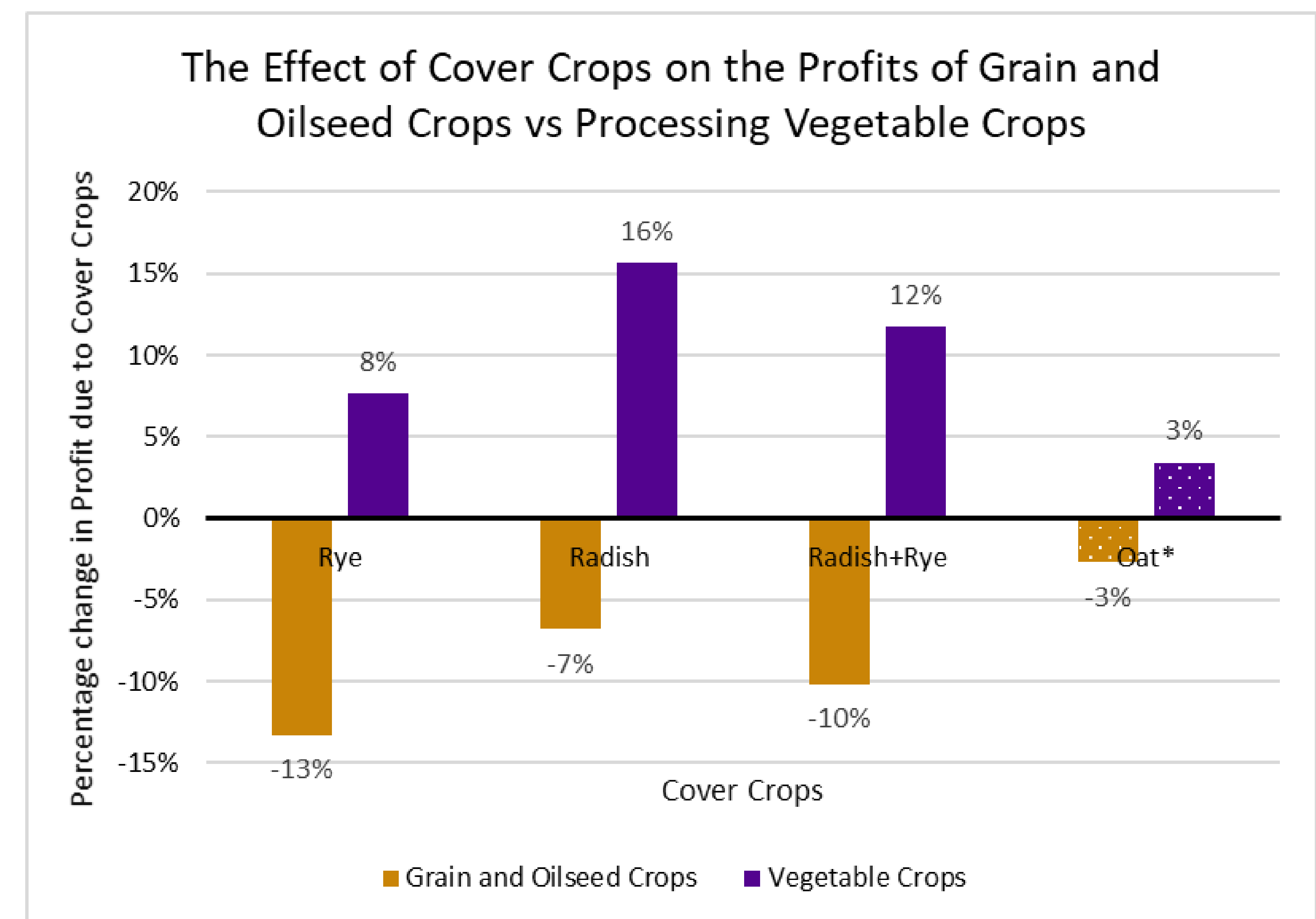
$$\frac{\text{Tomato (2) Profit Radish}}{\text{Average Tomato (2) Profit No CC}} = \text{PROPORTIONAL DIFFERENCE IN TOMATO (2) PROFITS DUE TO RADISH COVER CROP USE}$$

**COVER CROP EFFECT ESTIMATES WERE BASED ON THE PROFIT MARGIN RATIOS E.G. THE PROFIT EFFECT ESTIMATE FOR TOMATO (2) WITH RADISH = 0.22, I.E. TOMATO (2) PROFIT WITH RADISH WAS 22% HIGHER THAN TOMATO (2) PROFIT WITHOUT COVER CROPS**

## POLICY IMPLICATIONS

1. 68% OF ONTARIO CROPLAND IS UNDER GRAIN+OILSEED PRODUCTION. THESE GROWERS HAVE NO ECONOMIC INCENTIVE TO USE COVER CROPS, WHILE PROCESSING VEGETABLE FARMERS HAVE HIGHER YIELD AND PROFIT TO INCENTIVISE COVER CROP USE
2. LOSS IN PROFIT MAY BE A SIGNIFICANT BARRIER TO ADOPTION AND COULD BE A REASON THAT ONLY 18% OF FARMERS HAVE ADOPTED COVER CROPS, ACCORDING TO THE 2016 CENSUS OF AGRICULTURE
3. THE COST-SHARE POLICIES SHOULD ADDRESS POTENTIAL ANNUAL LOSSES DUE TO COVER CROP USE
4. DESPITE ON-FARM ENVIRONMENTAL GAINS, IF THE GOAL IS TO INCREASE COVER CROP USE FOR PUBLIC ENVIRONMENTAL BENEFITS THEN GOVERNMENT SUPPORT MAY BE NECESSARY TO INCENTIVISE COVER CROPS AMONG GRAIN+OILSEED PRODUCERS

## FINDINGS



Oat\* estimates were not statistically significant

### CREDITS

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Cover Crop picture by Dr Laura Van Eerd; Goal Post by ProSymbols from the Noun Project;  
Road Block by Chris Provins from the Noun Project