

# “Winter Canola Feasibility in Rotation with Winter wheat ”

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AGRICULTURE

YOUTH &  
FAMILIES

HEALTH

ECONOMY

ENVIRONMENT

ENERGY

COMMUNITIES



## Background

- Winter wheat-summer fallow rotations are predominate in the dryland cropping region of eastern Washington.



## Background

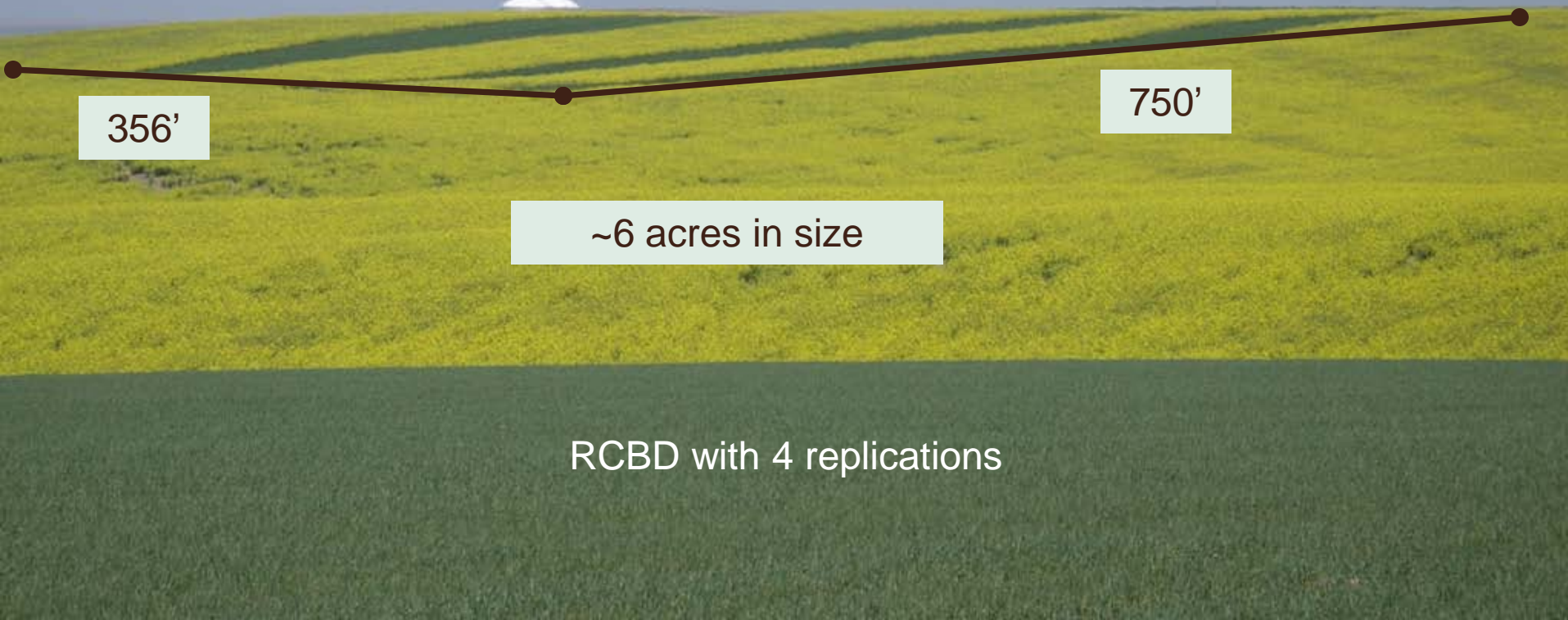
Also predominate  
are the repeated  
use of **Group 2**  
herbicide  
applications

- Trade names
  - Maverick
  - Olympus
  - Olympus Flex
  - Osprey
  - PowerFlex
  - **Beyond**



## Study Location

- Location: 9 miles east of Ritzville, WA
- Annual Precipitation: 11-12"
- Soil Type: Silt loam
- Crop Sequence: winter wheat-summer fallow



## Treatment and Operations



|                  | <u>Canola</u>  | <u>Wheat</u>  |
|------------------|----------------|---------------|
| Seed Date:       | 8/22/06        | 9/1/06        |
| Seed Rate:       | 8#/ac (32")    | 52 #/ac (16") |
| Fertilizer Rate: | 70-0-0-7       | 70-0-0-7      |
| Variety:         | 'DKA 13-86 RR' | 'Eltan'       |

## Treatment and Operations



# Treatment and Operations

## Study Timeline and Treatments

| <u>Crop Year</u> | <u>Treatment #1</u>  | <u>Treatment #2</u> |
|------------------|----------------------|---------------------|
| 2006             | Summer Fallow        | Summer Fallow       |
| <b>2007</b>      | <b>Winter Canola</b> | <b>Winter Wheat</b> |
| 2008             | Summer Fallow        | Summer Fallow       |
| 2009             | Winter Wheat         | Winter Wheat        |

## Results



Grassy weed **CONTROL**  
in winter canola  
with Roundup (Group 9)



Grassy weed **SUPPRESSION**  
in winter wheat  
with Osprey (Group 2)

## Results



**No** Herbicide application in winter canola

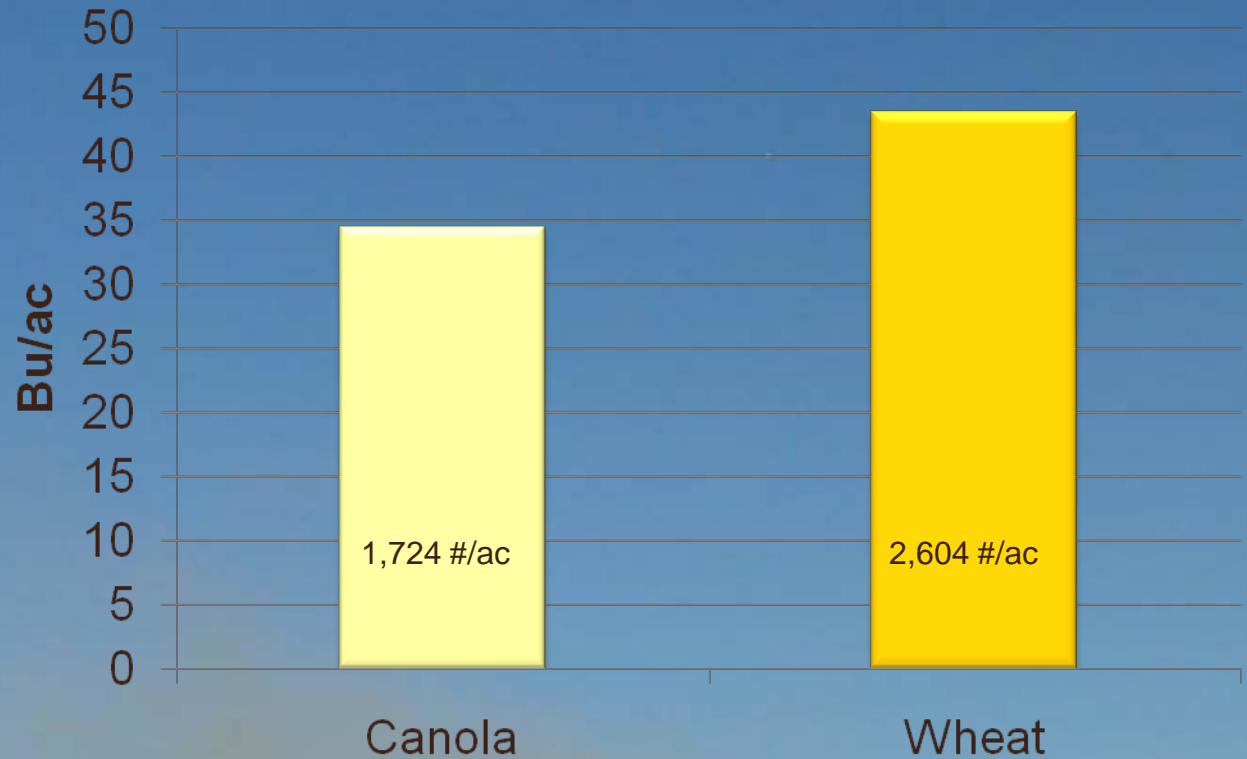
# Results





# Results

## Yield

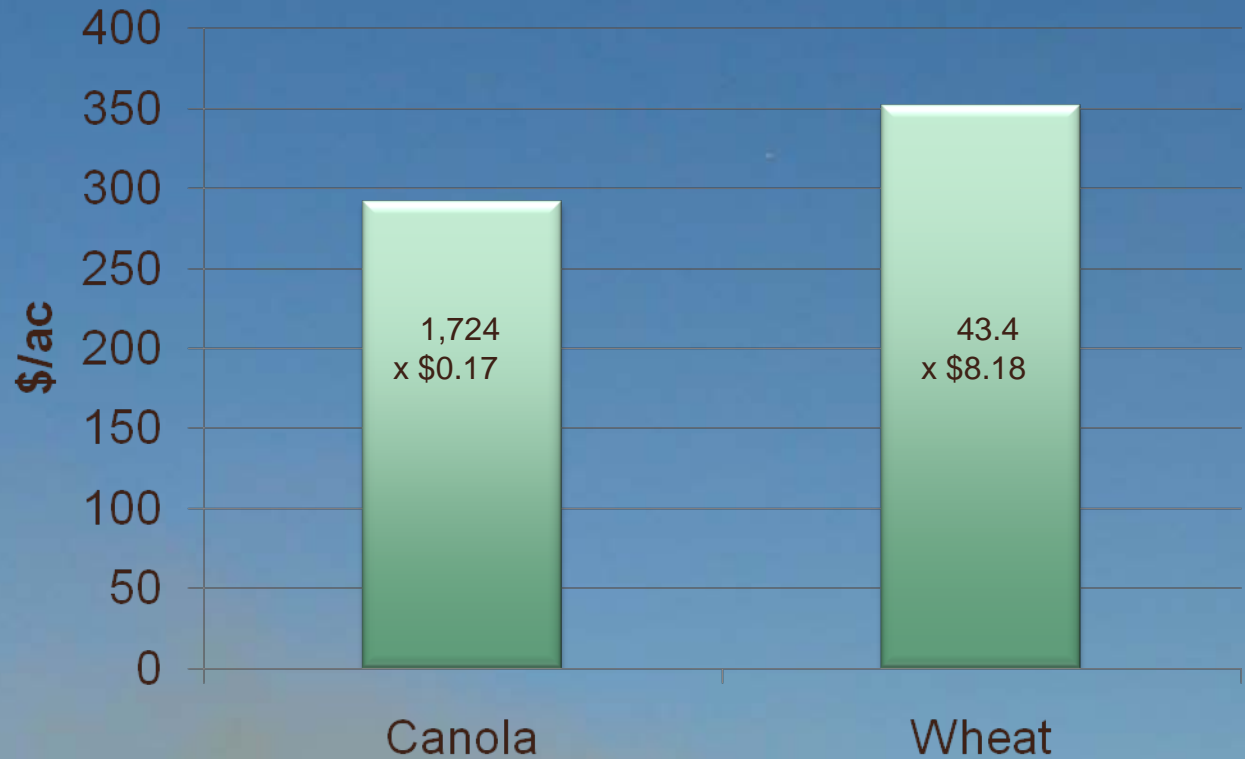


Level of Sign.  $P < 0.01$



# Results

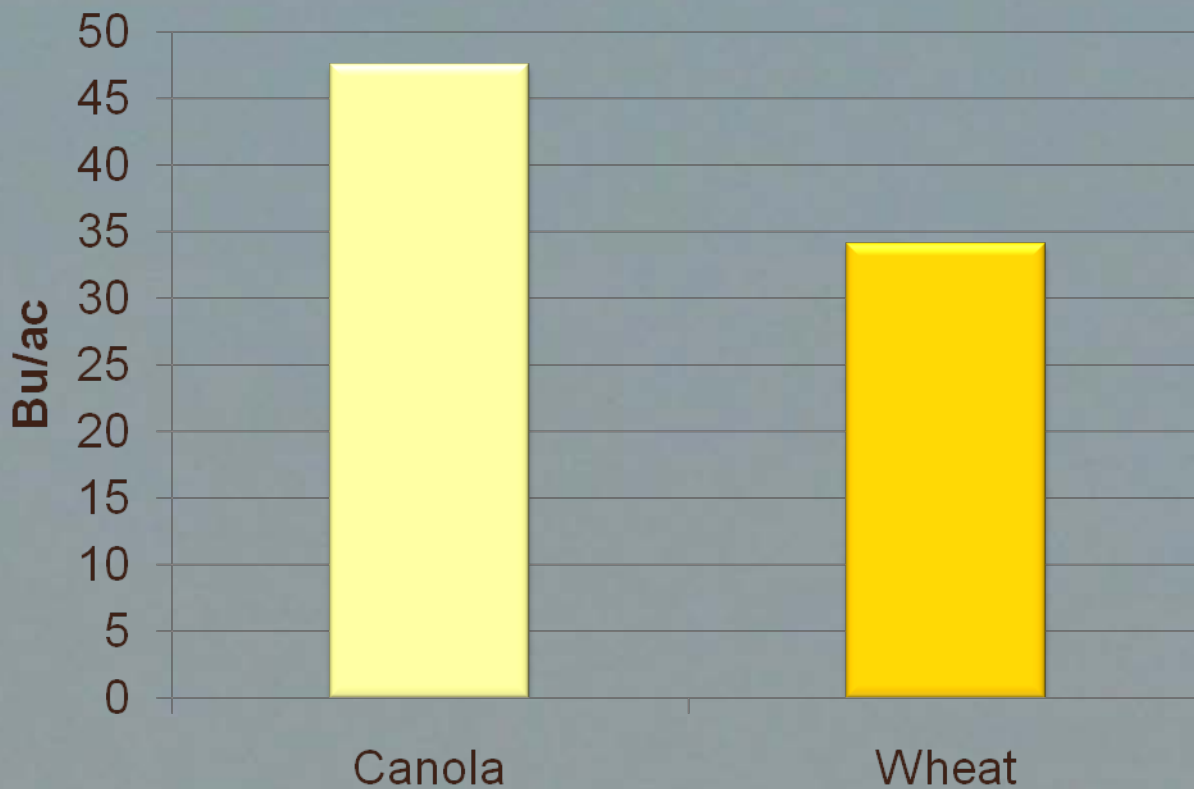
## Gross Economic Return



Level of Sign.  $P < 0.05$

## Results

### Winter Wheat Yield Following Treatments

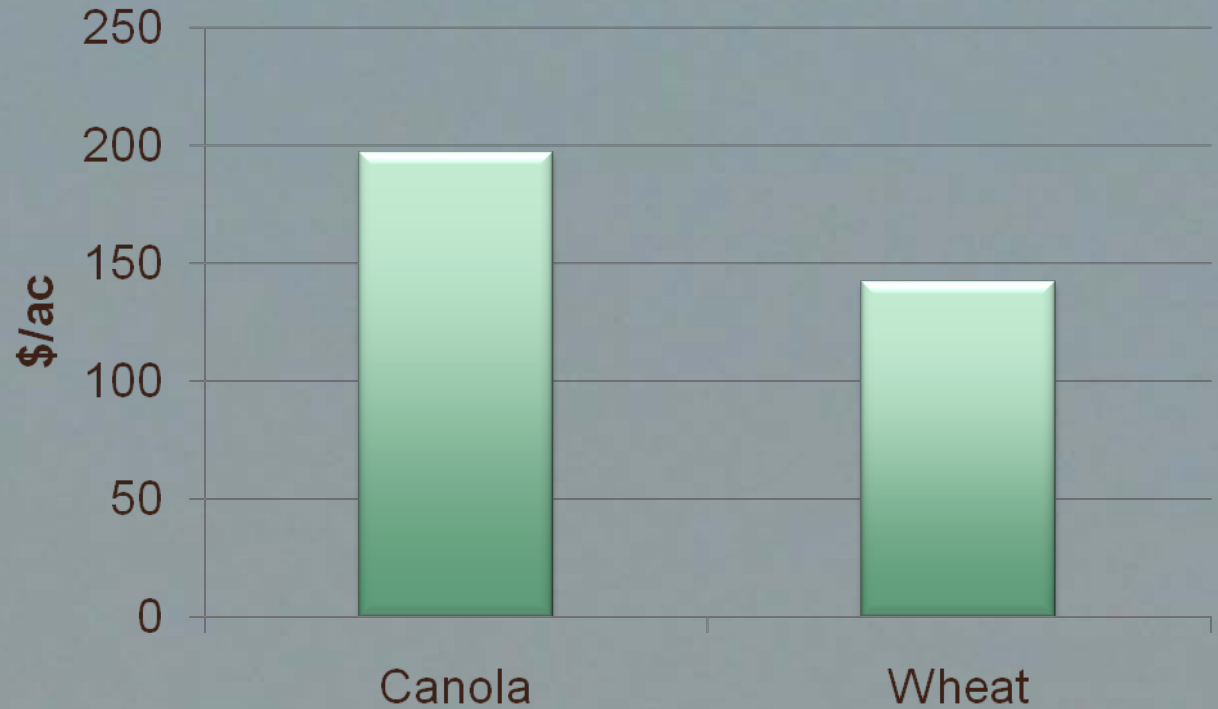


Level of Sign.  $P < 0.05$



## Results

### Winter Wheat Gross Economic Return Following Treatments

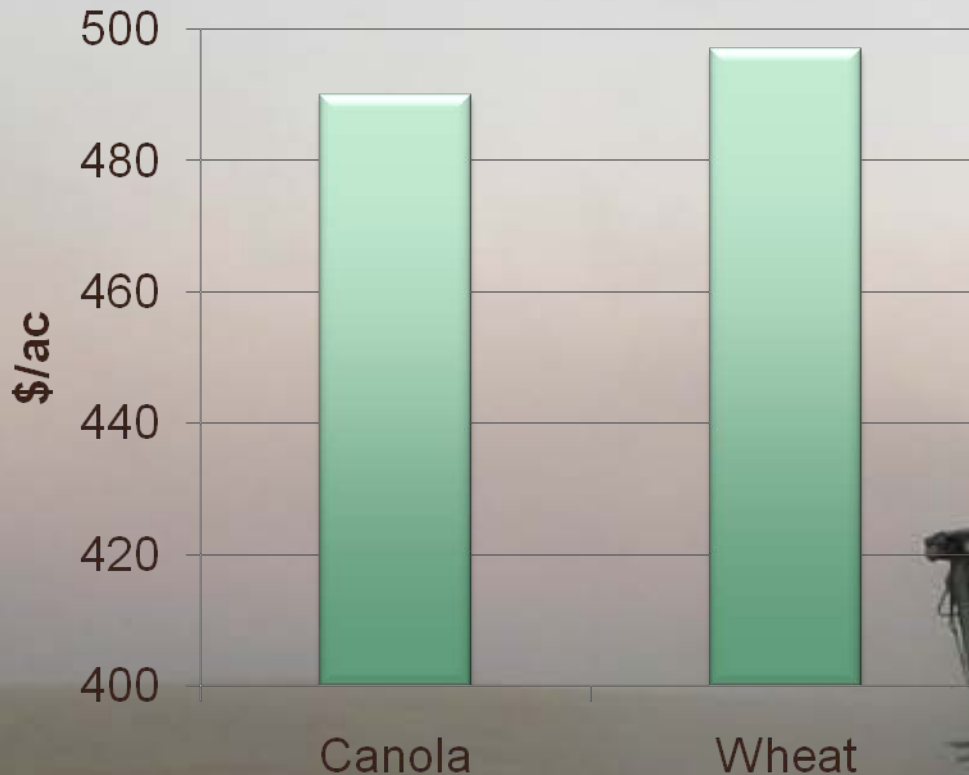


Level of Sign.  $P < 0.05$



## Results

### Total Gross Economic Return



Level of Sign. *n.s.*

LSD ( $P < 0.10$ ) = \$56.7



# Profitability of WW in comparison to WC give a specific market price. This includes the rotational value of canola

| Wheat (\$/bu) | Canola (\$/bu) |              |             |             |             |             |             |               |        |        |         |
|---------------|----------------|--------------|-------------|-------------|-------------|-------------|-------------|---------------|--------|--------|---------|
|               | \$5.00         | \$5.50       | \$6.00      | \$6.50      | \$7.00      | \$7.50      | \$8.00      | <b>\$8.50</b> | \$9.00 | \$9.50 | \$10.00 |
| \$4.00        | -\$54          | -\$72        | -\$89       | -\$106      | -\$123      | -\$141      | -\$158      | <b>-\$175</b> | -\$192 | -\$210 | -\$227  |
| \$4.25        | -\$44          | -\$61        | -\$78       | -\$95       | -\$113      | -\$130      | -\$147      | <b>-\$164</b> | -\$182 | -\$199 | -\$216  |
| \$4.50        | -\$33          | -\$50        | -\$67       | -\$85       | -\$102      | -\$119      | -\$136      | <b>-\$154</b> | -\$171 | -\$188 | -\$205  |
| \$4.75        | -\$22          | -\$39        | -\$56       | -\$74       | -\$91       | -\$108      | -\$125      | <b>-\$143</b> | -\$160 | -\$177 | -\$194  |
| \$5.00        | -\$11          | -\$28        | -\$46       | -\$63       | -\$80       | -\$97       | -\$115      | <b>-\$132</b> | -\$149 | -\$166 | -\$184  |
| \$5.25        | \$0            | -\$18        | -\$35       | -\$52       | -\$69       | -\$87       | -\$104      | <b>-\$121</b> | -\$138 | -\$155 | -\$173  |
| \$5.50        | \$11           | -\$7         | -\$24       | -\$41       | -\$58       | -\$76       | -\$93       | <b>-\$110</b> | -\$127 | -\$145 | -\$162  |
| \$5.75        | \$21           | \$4          | -\$13       | -\$30       | -\$48       | -\$65       | -\$82       | <b>-\$99</b>  | -\$117 | -\$134 | -\$151  |
| \$6.00        | \$32           | \$15         | -\$2        | -\$19       | -\$37       | -\$54       | -\$71       | <b>-\$88</b>  | -\$106 | -\$123 | -\$140  |
| \$6.25        | \$43           | \$26         | \$9         | -\$9        | -\$26       | -\$43       | -\$60       | <b>-\$78</b>  | -\$95  | -\$112 | -\$129  |
| \$6.50        | \$54           | \$37         | \$19        | \$2         | -\$15       | -\$32       | -\$50       | <b>-\$67</b>  | -\$84  | -\$101 | -\$119  |
| \$6.75        | \$65           | \$48         | \$30        | \$13        | -\$4        | -\$21       | -\$39       | <b>-\$56</b>  | -\$73  | -\$90  | -\$108  |
| \$7.00        | \$76           | \$58         | \$41        | \$24        | \$7         | -\$11       | -\$28       | <b>-\$45</b>  | -\$62  | -\$80  | -\$97   |
| \$7.25        | \$86           | \$69         | \$52        | \$35        | \$17        | \$0         | -\$17       | <b>-\$34</b>  | -\$52  | -\$69  | -\$86   |
| \$7.50        | \$97           | \$80         | \$63        | \$46        | \$28        | \$11        | -\$6        | <b>-\$23</b>  | -\$41  | -\$58  | -\$75   |
| \$7.75        | \$108          | \$91         | \$74        | \$56        | \$39        | \$22        | \$5         | <b>-\$13</b>  | -\$30  | -\$47  | -\$64   |
| \$8.00        | \$119          | \$102        | \$84        | \$67        | \$50        | \$33        | \$16        | <b>-\$2</b>   | -\$19  | -\$36  | -\$53   |
| <b>\$8.25</b> | <b>\$130</b>   | <b>\$113</b> | <b>\$95</b> | <b>\$78</b> | <b>\$61</b> | <b>\$44</b> | <b>\$26</b> | <b>\$9</b>    | -\$8   | -\$25  | -\$43   |
| \$8.50        | \$141          | \$123        | \$106       | \$89        | \$72        | \$54        | \$37        | \$20          | \$3    | -\$15  | -\$32   |
| \$8.75        | \$152          | \$134        | \$117       | \$100       | \$83        | \$65        | \$48        | \$31          | \$14   | -\$4   | -\$21   |
| \$9.00        | \$162          | \$145        | \$128       | \$111       | \$93        | \$76        | \$59        | \$42          | \$24   | \$7    | -\$10   |
| \$9.25        | \$173          | \$156        | \$139       | \$121       | \$104       | \$87        | \$70        | \$52          | \$35   | \$18   | \$1     |
| \$9.50        | \$184          | \$167        | \$150       | \$132       | \$115       | \$98        | \$81        | \$63          | \$46   | \$29   | \$12    |
| \$9.75        | \$195          | \$178        | \$160       | \$143       | \$126       | \$109       | \$91        | \$74          | \$57   | \$40   | \$22    |
| \$10.00       | \$206          | \$188        | \$171       | \$154       | \$137       | \$119       | \$102       | \$85          | \$68   | \$51   | \$33    |

- Price structure winter wheat is more profitable...ww average yield of 43.4 bu/ac
- Price structure winter canola is more profitable...wc average yield of 1,724 lb/ac
- Price to consider weeds, soil moisture, price stability, etc.

# Profitability of WW in comparison to WC give a specific market price. This includes the rotational value of canola

| Wheat (\$/bu) | Canola (\$/bu) |             |             |             |             |            |              |              |              |              |              |
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| \$4.00        | -\$54          | -\$72       | -\$89       | -\$106      | -\$123      | -\$141     | -\$158       | -\$175       | -\$192       | -\$210       | -\$227       |
| \$4.25        | -\$44          | -\$61       | -\$78       | -\$95       | -\$113      | -\$130     | -\$147       | -\$164       | -\$182       | -\$199       | -\$216       |
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## Conclusions

- **Winter canola has the potential to be a viable crop to incorporate into a winter wheat summer fallow rotation**
  - **Compete economically**
  - **Improve weed control**
  - **Reduces potential for Group 2 herbicide resistant weed populations.**



## Conclusions

- **Canola yielded less than wheat but winter wheat following canola yielded 39.3% better.**



## Conclusions

- **Despite yield differences, winter wheat and canola market price differential between the two crops has a larger influence on the profitability and can vary dramatically from year-to-year.**



## Conclusions

- **Overall canola needs to have a 26.4% price advantage per bushel over wheat to produce significantly greater gross economic returns**



Thank You

