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Economic Returns to Canola Rotations in Eastern Washington

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Summary

- Agronomic benefits from canola may translate into improved overall farm profitability

- Our research finds favorable economic returns for crop rotations that incorporate canola vs. returns of traditional rotations

Overview of Presentation

1. Comments on previous reports & current economic outlook for oilseed production
2. Methodology of current research
3. Selected findings from budgets
4. Next steps

Previous reports

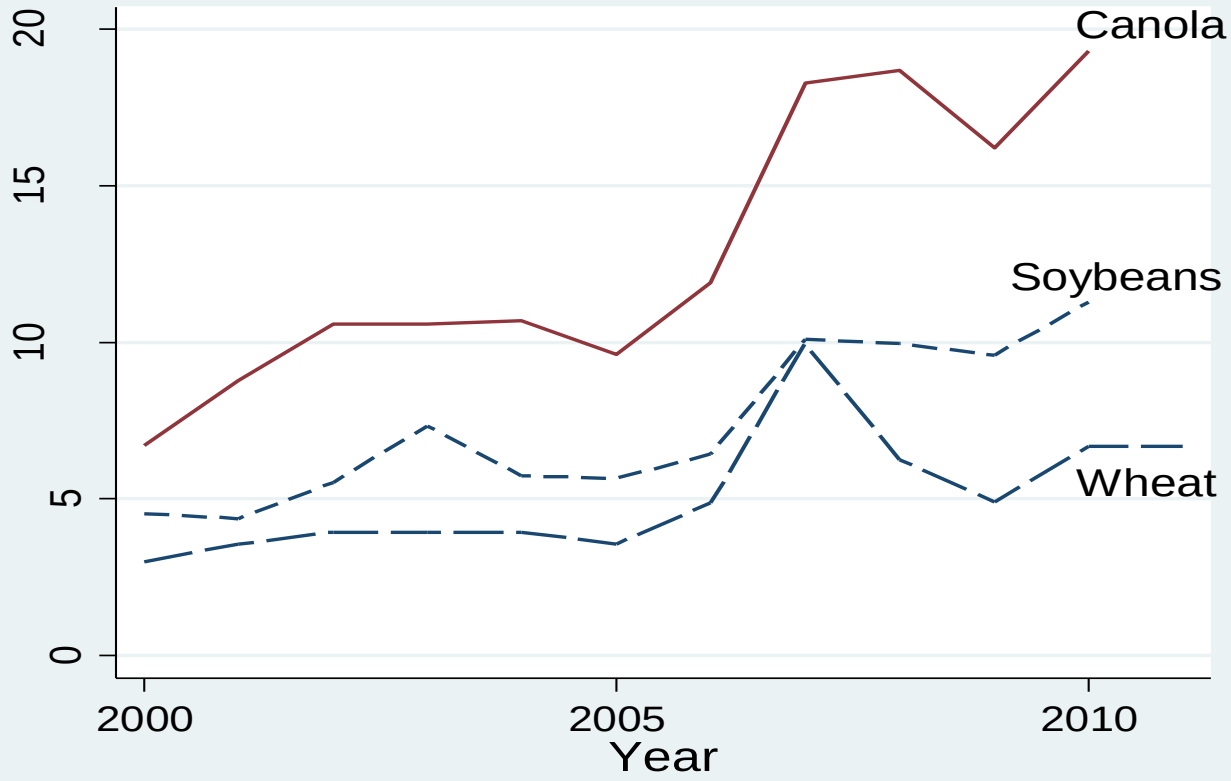
- Previous studies found unfavorable outlook for canola, assuming:
  - Macro level conditions
  - Traditional rotations for the state
  - No rotational effects of canola in a system
  - Lack of experience growing canola

- Research and market development could improve outlook for canola production

Current Outlook

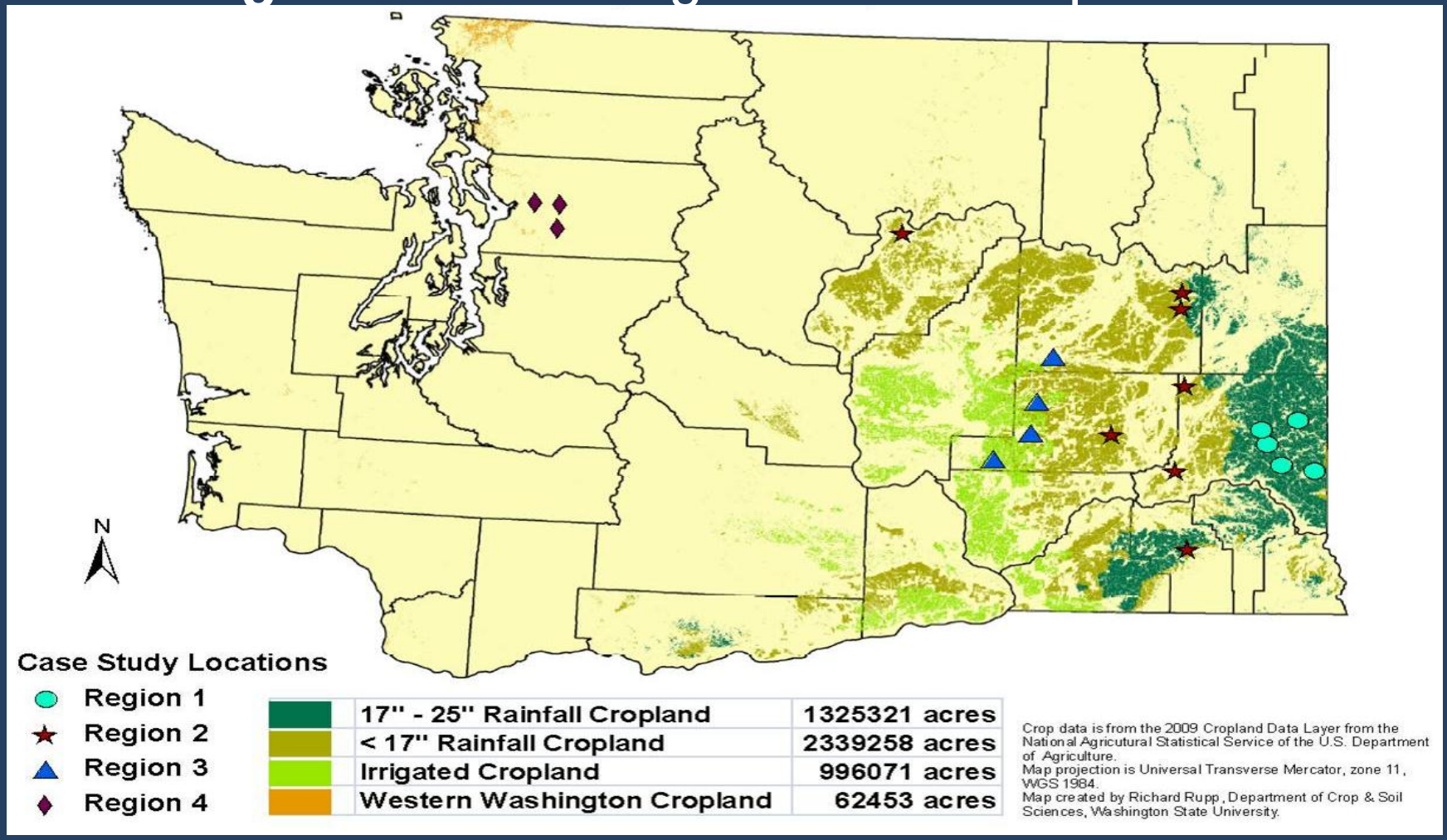
- Development of local markets
- Advances in agronomics and variety development
- National oilseed price trends

National Price Trends for Canola, Soybeans and Wheat



Price Trends- 2000 to 2010

Figure 1: Washington State Crop



Methodology

1. Adapted enterprise budgets created by Kate Painter
2. Used average yields for the crop region
3. Used average market prices, inputs costs for 2012 season
4. Incorporated rotational impacts on yield and inputs based on grower input and expert opinion

Assumptions

- Used projected yields and inputs costs for non-traditional systems
- Assumed equal acreage of each crop in rotation
- Assumed all canola Roundup Ready, except Region 3

Selected Scenarios- Region 1

- Annual cropping and transition region
  - Replace spring legume with spring canola
  - Replace chemical fallow with spring canola

Region 1: Annual Cropping
Replace Spring Legume with Spring Canola

Rotation/Scenario	Returns over Total Costs ($/ac/yr)	Returns over Variable Costs ($/ac/yr)
Baseline – WW (85), SW (65), SC (1900), SP (2000)		
WW, SWSW, SP	**$139**	$310
WW, SWSW, SC	$136	**$320**
Plus rotational impact (+15%WW)		
WW, SWSW, SP	$139	$310
WW, SWSW, SC	**$169**	**$353**

Region 1: Transition Zone
Replace Chemical Fallow with Spring Canola

Rotation/Scenario	Returns over Total Costs ($/ac/yr)	Returns over Variable Costs ($/ac/yr)
Baseline – WW (78), SW (42), SB (1.5), SC (2000)		
WW, SB, CF	$63	$214
WW, HRSW, CF	$67	$222
WW, HRSW, SC	**$148**	**$296**
Low Canola Yields (1200), no rotational impact		
WW, SB, CF	$63	$214
WW, HRSW, CF	$67	**$222**
WW, HRSW, SC	**$98**	**$221**
Low Canola Yields, rotational impact (+15%WW)		
WW, SB, CF	$63	$214
WW, HRSW, CF	$67	$222
WW, HRSW, SC	**$118**	**$251**

Selected Scenarios– Region 2

- Fallow system, conventional and reduced tillage
  - Move from 2-yr to 3-yr rotation with canola
  - Winter Canola every other WW-Fallow Cycle

Region 2: Fallow Systems
Move from 2-year to 3-year rotation with canola

Rotation/Scenario	Returns over Total Costs ($/ac/yr)	Returns over Variable Costs ($/ac/yr)
Baseline – SWWW (50), SC (1500)		
Conventional Till		
SF-WW-SF-WW-SF-WW	$37	$153
SF-WW-SC, SF-WW-SC	**$48**	**$164**
Reduced Till		
CF-WW-CF-WW-CF-WW	$28	$117
CF-WW-SC, CF-WW-SC	**$54**	**$190**

Region 2: Fallow System (reduced till)
Winter Canola every other WW-Fallow Cycle

Rotation/Scenario	Returns over Total Costs ($/ac/yr)	Returns over Variable Costs ($/ac/yr)
Baseline – SWWW (50), WC (1500)		
CF, WW, CF, WW	$28	$117
CF, WW, CF, WC	**$30**	**$122**
Low wheat yields, no rotational impact		
CF, WW, CF, WW	-$11	$58
CF, WW, CF, WC	**$11**	**$93**
Low wheat yields, rotational impact (+15% WW)		
CF, WW, CF, WW	-$11	$58
CF, WW, CF, WC	**$21**	**$103**

Selected Scenarios- Region 3

- Irrigated system
  - Insert canola in 4-year WW-Potato rotation

Region 3: Deep-well irrigated systems
Insert canola in 4-year WW-Potato rotation

Rotation/Scenario	Returns over Total Costs ($/ac/yr)	Returns over Variable Costs ($/ac/yr)
Baseline – HRWW (120), WC (3200)		
WW, WW, WW, Potato	**$371**	**$701**
WW, WC, WW, Potato	$336	$645
Decreasing WW yields, benefit from alt. WC		
WW, WW, WW, Potato	$330	$640
WW, WC, WW, Potato	**$336**	**$645**

Conclusions

- Inclusion of canola **increased input costs** of all rotation systems considered
- Recent **prices for all crops** result in positive returns for all rotations (short and long run)
- In scenarios where **average or low canola yields** were considered, rotations with canola had positive returns but sometimes second to traditional rotations
  - ➢ However, when the **rotational impacts** were considered, rotations with canola provided the highest returns

Quotes from Growers

- "We need an oilseed that will complement winter wheat, not compete with it."
  - Region 1, annual cropping farmer

- "Canola is not more valuable than wheat until you look at the whole picture"
  - Region 2, fallow area farmer

Next steps

- Work on budgets is **on-going**
  - Irrigated budgets
  - Difference in input use from incorporating canola
  - Incorporation of location (e.g. transportation costs)
  - Budgets usable by producers

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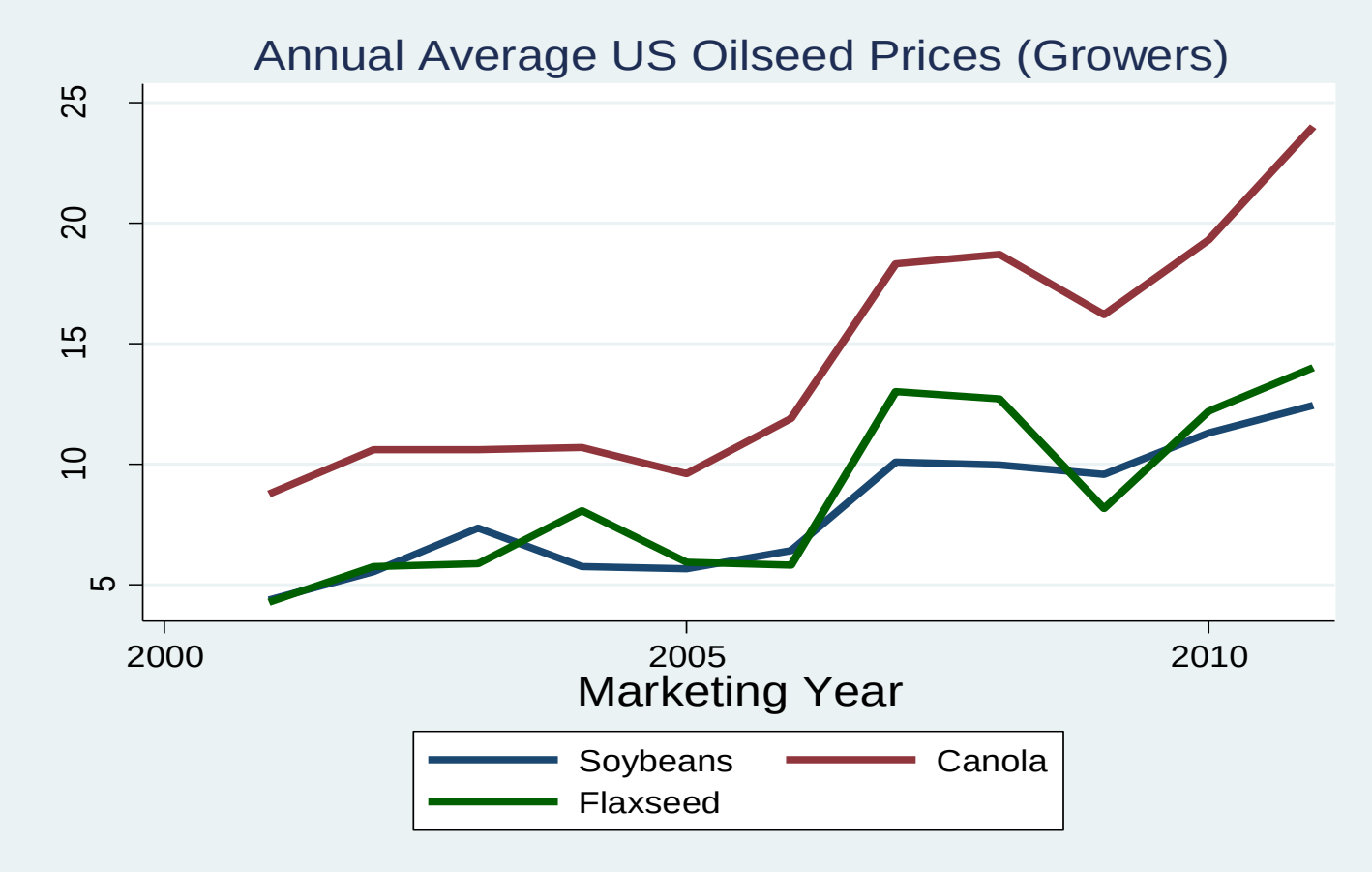
Extra slides…

Terminology

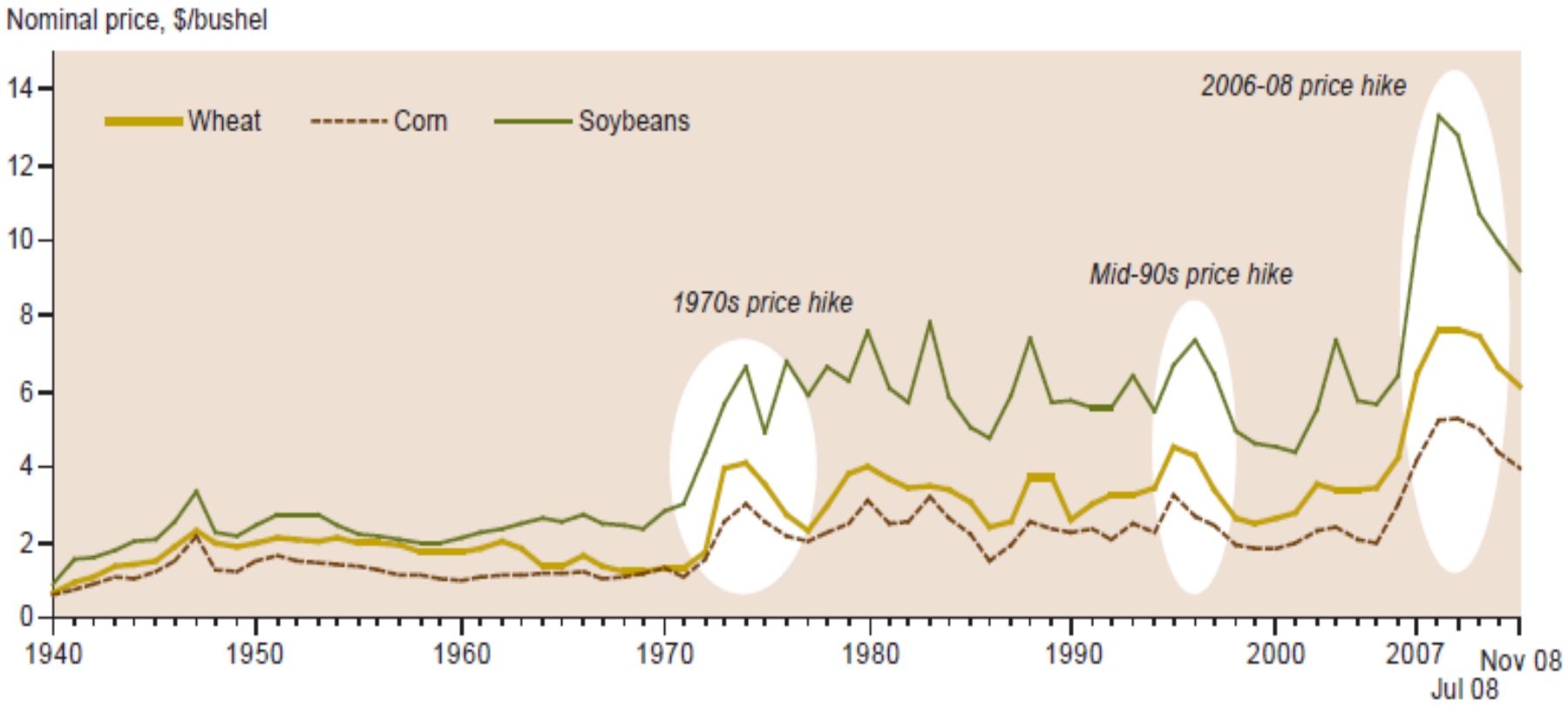
- Variable costs
  - Seed, fertilizer, pesticides, labor, etc.
- Fixed costs (FC)
  - Land costs, machinery depreciation, etc.

Variable Costs + Fixed Costs = Total Costs (TC)

Annual Average National Oilseed Prices

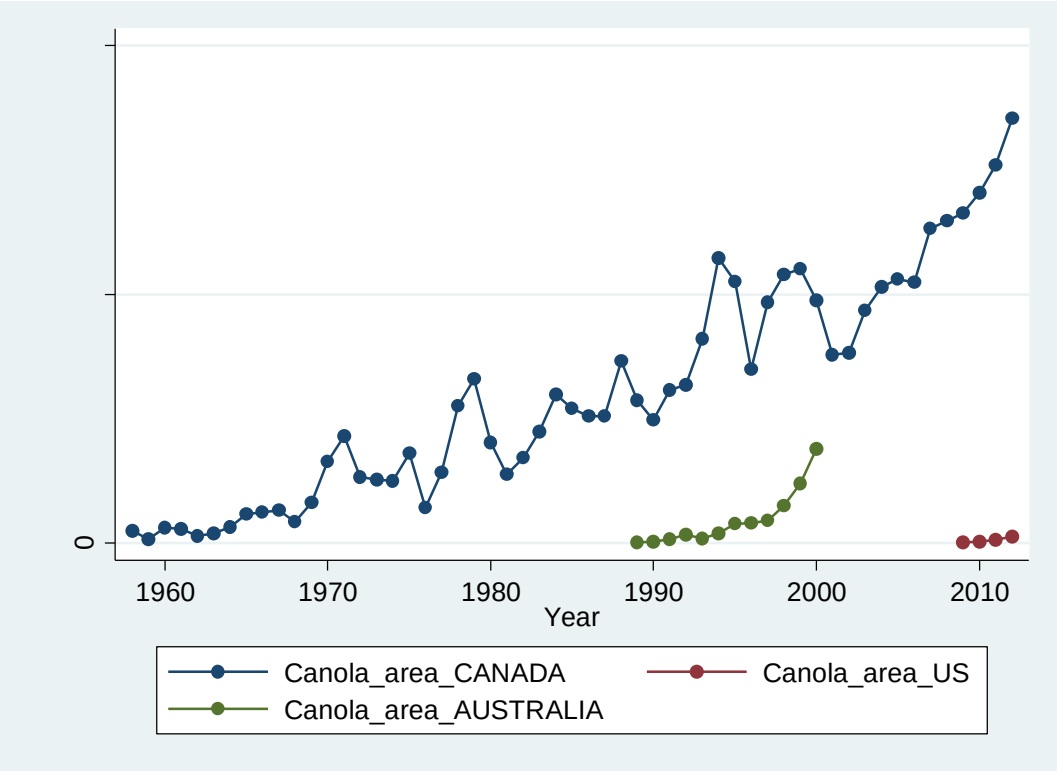


Price Trends for Oilseeds and Cereals, 1940 – 2009



Sources: USDA, National Agricultural Statistics Service and World Agricultural Supply and Demand Estimates, 2008.

Canola Area (hectares), by Production Area



Biofuel Economics and Policy for Washington State, 2008

Policy Goals Considered:

1. Increase in-state production of biofuels
2. Increase in-state production of biofuel feedstocks
3. Reduced petroleum dependence
4. Reduced carbon emissions
5. Fostering environmental sustainability

Wheat yields with new varieties releases from WSU Variety Testing Program, 1970-2005

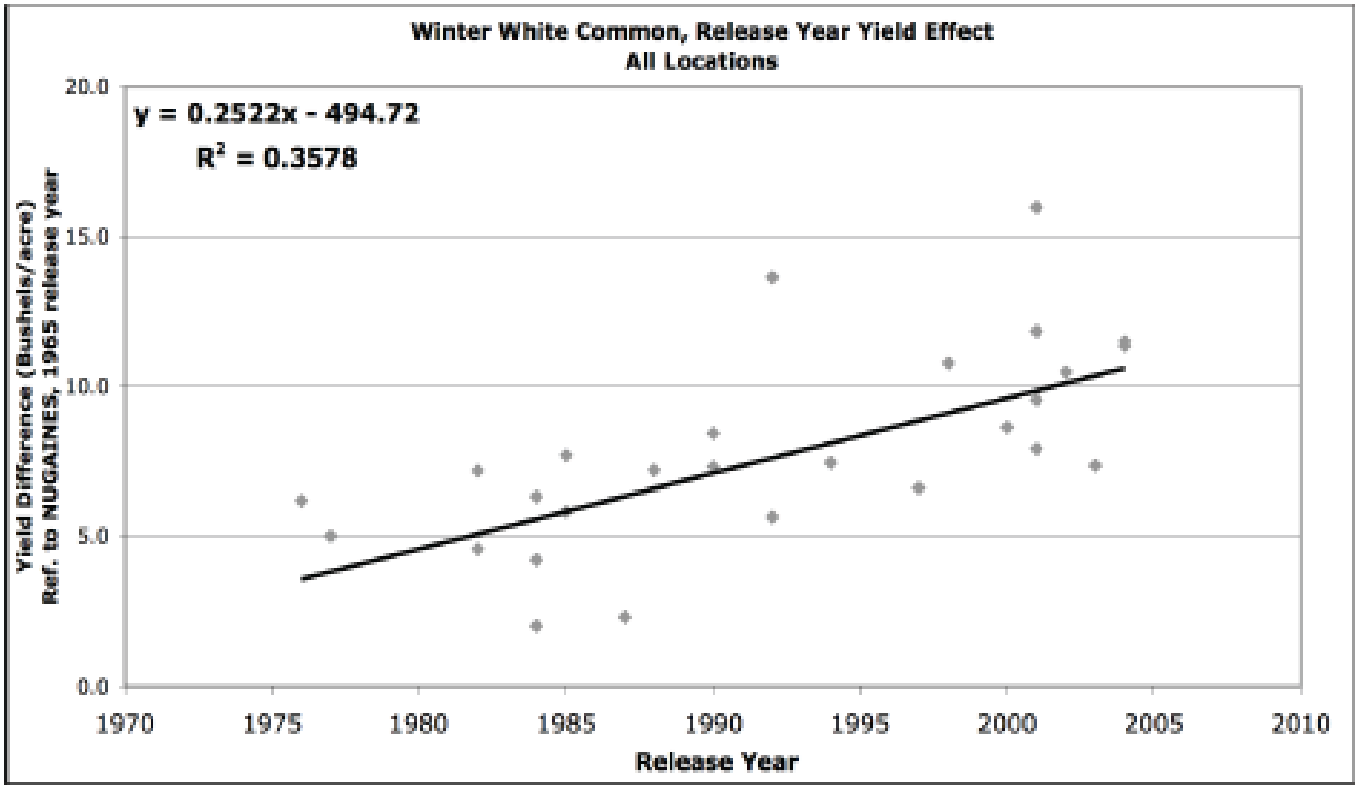


Figure 2.2. Winter white common variety performance referenced to NUGAINES by release year.