Case Study for Cropping Concepts in North Central Washington

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Traditional Winter Wheat/Fallow

Region 2 (2.33 M acres)

- wheat 52%
- fallow 39%
- others 8%
- legumes 1%
- oilseeds 0%
Introducing Winter Canola to Northcentral, WA

Initiated research in 2007 with the seeding rate and date study. At that time < 180 acres of winter canola planted.
Aspects Addressed:

Introduction of winter canola
  ◦ Seeding date / rate
  ◦ Varieties

Pest management
  ◦ Insects
  ◦ Weed management / resistance

Canola rooting
  ◦ Compaction / water filtration

Canola impact on wheat
Our First Attempt at Winter Canola
Poor Stand Establishment

Fall 2005 (grower’s surrounding field)

Fall 2009 research plots
Research Findings for Low-Rainfall

Generally 3 to 5 lb /a
Two to 4 plants / ft²
Temperatures < 85 F
When “Mother Nature” tells you!
Plant August 1 to 31
Benefit of Stripper Header

Tilled WW Fallow

SH WW Chem Fallow
Variety Trials
(4 yrs)
Pest management - Insects

Control:

- bifenthrin (Tailgunner)
- cyhalothrin gamma (Declare)
- imidacloprid (Gaucho 600)
- lambda-cyhalothrin (Warrior II w/ Zeon Technology)
- zeta-cypermethrin (Mustang Maxx)

Cabbage Seedpod Weevil
Pest management - Weeds

- Jointed goatgrass (*Aegilops cylindrica*)
- Downy brome (*Bromus tectorum*)
- Feral ryegrass (*Secale cereale*)
Feral Rye Control in Canola

Fall 2013

Spring 2014
Table 1: Effect of three herbicides on feral rye control, above ground dry weight, plant density, seed production and winter canola yield in 2012 at Bridgeport, WA.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate $^b$</th>
<th>Control</th>
<th>Dry weight</th>
<th>Density</th>
<th>Seeds $^a$</th>
<th>Canola yield</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kg ha$^{-1}$</td>
<td>%</td>
<td>kg ha$^{-1}$</td>
<td>— no. m$^{-2}$ —</td>
<td>kg ha$^{-1}$</td>
<td></td>
</tr>
<tr>
<td>Nontreated</td>
<td>-</td>
<td>-</td>
<td>4320</td>
<td>430</td>
<td>12350</td>
<td>275</td>
</tr>
<tr>
<td>Clethodim (F)</td>
<td>0.105</td>
<td>67</td>
<td>1290</td>
<td>410</td>
<td>6580</td>
<td>705</td>
</tr>
<tr>
<td>Clethodim (F+S)</td>
<td>0.105+0.105</td>
<td>83</td>
<td>400</td>
<td>165</td>
<td>T</td>
<td>770</td>
</tr>
<tr>
<td>Clethodim (S)</td>
<td>0.105</td>
<td>60</td>
<td>2100</td>
<td>425</td>
<td>0</td>
<td>600</td>
</tr>
<tr>
<td>Quizalofop (F)</td>
<td>0.062</td>
<td>63</td>
<td>1390</td>
<td>260</td>
<td>4180</td>
<td>682</td>
</tr>
<tr>
<td>Quizalofop (F+S)</td>
<td>0.062+0.062</td>
<td>96</td>
<td>20</td>
<td>15</td>
<td>T</td>
<td>1075</td>
</tr>
<tr>
<td>Quizalofop (S)</td>
<td>0.062</td>
<td>93</td>
<td>130</td>
<td>50</td>
<td>0</td>
<td>835</td>
</tr>
<tr>
<td>Glyphosate (F)</td>
<td>0.866</td>
<td>69</td>
<td>935</td>
<td>180</td>
<td>2880</td>
<td>785</td>
</tr>
<tr>
<td>Glyphosate (F+S)</td>
<td>0.866+0.866</td>
<td>99</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1025</td>
</tr>
<tr>
<td>Glyphosate (S)</td>
<td>0.866</td>
<td>99</td>
<td>&lt;1</td>
<td>1</td>
<td>0</td>
<td>860</td>
</tr>
</tbody>
</table>

$^a$ Abbreviations: F = fall; S = spring; T = trace amounts of seed (<2).

$^b$ Rates are expressed in kg ai ha$^{-1}$ for clethodim and quizalofop and kg ae ha$^{-1}$ for glyphosate.
Water Infiltration

summer fallow/canola:  
5.5”/hour

summer fallow/winter wheat:

1.2”/hour
Impact on Winter Wheat

Wheat <35 bu/A, $1.45 /bu dockage

Wheat 74 bu/A
Impact of Grower/Research Collaboration

400 acres in 2007

10,000 acres in 2013
And One Step Further
“Insanity is doing something over and over again and expecting a different result.”

Einstein?
Thank You