Lessons Learned- Direct Seeding
<12 Inches Moisture

Tom Poole
Mansfield, WA
1. I don’t know, you don’t know, so let me explain it to you.

2. If it is easy, it is wrong.

3. Never just 1 answer to a question or problem. Refer to answer #2.
Why Direct Seed

1. Yield Ceiling

2. Difficult to manage rotations

3. Old equipment

4. Government Programs:
   - Conservation Stewardship Program
   - Environmental Quality Incentives Program
### Recent Production

<table>
<thead>
<tr>
<th>Year</th>
<th>Crop</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>2014</td>
<td>Wheat</td>
<td>945,357 bu.</td>
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<tr>
<td></td>
<td>Canola</td>
<td>220,815 bu.</td>
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<tr>
<td></td>
<td>Total</td>
<td>1,166,172 bu.</td>
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<tr>
<td>2015</td>
<td>Wheat</td>
<td>1,318,833 bu.</td>
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<tr>
<td></td>
<td>Canola</td>
<td>180,257 bu.</td>
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<tr>
<td></td>
<td>Total</td>
<td>1,499,085 bu.</td>
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</tbody>
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Average Rainfall

Waterville, WA

- 1931-2005
- Ave. 11.45”
  - Max. 24.26” 1948
  - Min. 6.74” 1976
- AVE./CROP 22.9”

- LAST 100 YEARS
- SOIL DEGRADATION
Direct Seeding

- Water Management:
  - 10% more efficient (2") = 25% more YIELD
  - (12 bu) 48-60 bu.

- Fertilizer Management:
  - Placement, timing and type of fertilizer

- Cost of Production:
  - No savings
2011
- 600 a. spring wheat and 500 a. winter wheat planted on chemfallow

2012
- 600 a. spring wheat and 950 a. winter wheat planted on chemfallow

2013
- 100% Direct Seed. Rotations and crops
  - Winter wheat, Spring wheat, Winter canola, Barley, Oats, Triticale
  - Rotations also include CHEMICALS
Direct Seeding

Protect and improve the condition and productivity of the soil
The System and the Spokes

1. Chemfallow

2. Coultering

3. Planting/Fertilizing

4. Pesticide Application/Fertilizing in Crop

5. Harvest
1. Same goals as conventional summer fallow
2. Water conservation
3. Create mulch on top 4” of soil to hold moisture for seeding
4. Residue mulch vs mechanical mulch
Sprayer

Apache AS 1220 - 1200 gal, 100 ft. boom
Apply 5 gpa @ 8-9 mph. for chemfallow – Green Turbo Tee Jet TT110015 Nozzles
Blue Stream Jets - 13 gpa --topdressing fertilizer
Brown Turbo Twinjet- TTj60-11005 16gpa – Insecticides and fungicides
Systemic – Early Season

- Round-Up-Unison or Barrage
- Treat water with 17 lbs NH₄SO₄
- Always use a mix, ex. RU+2,4-D
- Rotate with chemfallow and in crop
  - Ex. 24-D in chemfallow, use Huskie in crop

Contact – Late season

- Sharpen-Broadleaves
- Gromoxone-Nonselective Both grasses and broadleaves
Coultering

Used in transition for 1st crop no-till

Used to size clods and residue
Planting/Fertilizing

John Deere 1870 w/1910 cart
120 bu wheat and 1900 gal fertilizer

Fertilizer points rips into moisture in hard dirt, seed boot & press wheel packs

Type of fertilizer - liquid, dry or NH₃
Determines type of point and drill

Fert point
Seed boot
Planting in Low Moisture

- Fertilizer can compromise seedling survival
  - Reduce the amount of N and S
  - Use higher rates of P
  - Use Agrotain with UN-32. Slows conversion to NH₃.

- Seed
  - Use higher seeding and treatment rates
  - USE LARGEST SEED AVAILABLE
    - Determines the energy available for new planting
  - Delay seeding date
Harvest

- Process residue at harvest
- Chopping aids breakdown
- Split apply fertilizer in fall can aid decomposition

John Deere S-680 with 635 Draper

2015 – 3rd crop Direct Seed
Never a Single Answer

Hole dug in canola field at harvest and root growth of canola plant (Below)

Root growth of Sorghum sudan cover crop after 5 weeks of growth
Comparison

W/wheat following
W/canola

W/wheat following Cover Crop
Never Easy but Always Fun

Cover Crop after 5 Weeks

Wheat row with no fertilizer

7lbs. N, 12 lbs P₂O₅, 8 lbs. S.
Fall 2015

Mela Clearfield Soft White

Mercedes Hybrid Canola
Thank You

ROTATION, ROTATION, ROTATION, ROTATION

CROPS AND CHEMICALS