Winter Canola Production in Oklahoma

Heath Sanders
Extension Assistant
(Winter Canola)
Oklahoma State University
Why Canola?

- Clean up weedy wheat fields.
- More profit than wheat.
- Breakup wheat disease cycles.
- Don't need new equipment.
- Improve future wheat yields & quality.
- In state crusher with local delivery points.
- Multi-peril crop insurance available.
- Provides broadleaf winter rotation option.
- Production education available.
- Market demand for healthy oil
- Dire need for rotation with wheat.
Feral Rye in Wheat. Other weeds include (Resistant ryegrass, cheat, wild oats, jointed goatgrass)
Mission Statement: To provide research, education and demonstration to stimulate the development of winter canola as a major profitable rotational crop in Oklahoma.
Canola Seedling Growth and Development

• Seedling emerges 4 to 10 days after planting and develops a short stem.

• Unlike wheat, whose growing point is protected beneath the soil during development, the growing point of canola is above the soil between the two cotyledons.

• The exposed growing point makes seedlings more susceptible than wheat to environmental hazards.
Fall Growth

Canola needs to 3-4 true leaves for winter survival
Winter Freeze Response

- Typical winter response during (rosette) semi-dormant stage.
- Fall foliage is produced for over wintering.
- Spring foliage (bolting) is produced mainly for seed production.
Spring Re-growth - Bolting

Chickasha, Okla.
Canola Flowering

• Flowering begins with the opening of the lowest bud on the main stem and continues upward. Three to five flowers open each day. Flowering continues for 2 to 3 weeks.

• Canola plants initiate more flower buds that can develop into productive pods. Only half the flowers that open will develop into productive pods.
Canola Seed Pods
Field Selection

• Take a soil sample and get a soil test!!!!!!!!!
  – Save money and time
  – A soil pH between 6.0 and 7.0 is optimal. Yields maybe reduced by pH below 5.5.
  – Varieties with pH tolerance
  – Grows best in medium-textured well drained soils, but will grow in a wide range of soils.

• Canola does not tolerate water-logged conditions
Canola Seedbed Preparation

• Apply pre-plant fertilizer before final tillage operation.
• The seedbed should be fairly level, moderately firm and moist. You should sink no deeper than the heel of your work boot.
• If the seedbed is too fine (overworked), it can lose soil moisture.
• A moderate amount of crop residue on the soil surface is desirable.
• Rollers (packers) can be used to firm soil and allow moisture into the planting zone.
• No-till canola production has its issues. Residue management!
  – Canola likes a clean row or furrow
Residue Management
Optimum Canola Planting Dates

- In Oklahoma plant winter canola between Sept. 10 and Oct 10
- Preventative planting or failure to get stand: Still have time to plant wheat!
Best Planting Equipment?

- Older equipment - use rapeseed setting.
- Control planting depth to 0.5 to 1”.
- Ability to plant small seed, without large furrows.
- Make sure seed is covered.
- Minimize potential for crusting.
Fertilizer Requirements

- Soil should be tested prior to seedbed establishment.
- Fertilizer recommendations are based on winter wheat and should be used as a reference.
- Test should include N, P, K, S.
- In general, canola requires approx. 25% more N, same P, and K and about twice as much S compared to wheat.
Fertilizer Requirements

• Fall: Apply only 1/3 to 1/2 of the nitrogen and the required P and K. Sulfur if using elemental.

• Spring: Apply the rest of the nitrogen as liquid or dry. Use A. Sulfate (fertilizer grade) or A. thiophosphate for sulfur source.

• General rule of thumb is 5 lbs of nitrogen per 100 lbs of canola.

• Amount of P & K based on normal wheat production.
Winter Canola
Sulfur Requirements

• Unlike winter cereals, canola has a high demand for S because of its high content of S-containing proteins. Sulfur also allows the plant to use N efficiently.

• General recommendation is 10 to 20 lbs / A.

• Sulfur can be applied in the fall or with in the spring.

• Elemental must go down in the fall.

• Ammonium sulfate fertilizer (fert grade) is preferred over elemental form. Applied fall or spring.

• A. Thiophosphate (liquid) applied in the spring.
Pest Management of Winter Canola

Southern Great Plains
Insecticide Treatments

• Seed Treatments
  – Prosper FX (DeKalb Varieties and Sumner)
  – Helix XTra (Croplan Varieties)
  – Both are high powered insecticides and work very well
  – Eliminates early aphid pressure through the fall

• Post Emerge Treatments
  – Synthetic Pyrethroid
  – Methyl Parathion
Diamondback Moth Larvae

- Color is pale green, and is slightly tapered at each end
- Wiggle rapidly when disturbed
- Feed on all parts of the plant, preferring undersides of older leaves
The 3 Aphids in Canola

1. Turnip Aphid
   - Fall, winter, and early spring

2. Green Peach Aphid
   - Fall, winter, and early spring

3. Cabbage Aphids
   - Late Spring and Flowering
Turnip Aphids

- Color is pale gray-green
- Short, swollen cornicles
Green Peach Aphids

• Color is pale green-yellow, even some red
• Long cornicles, or tailpipes
• Three dark lines on abdomen
Cabbage Aphids

• Color is blue-gray
• It will have short cornicles
• Be covered in a powdery wax secretion
Aphid Pressure

• Turnip and Green Peach
• Look under the leaves
• Look for “Hot Spots”

March 2009
Aphid Recommendations for January-March

Sampling

Pattern: Diagonal across field

* 3 plants at 10 stops (30 plants)

Stop every 25 yards
* Count aphids on 3 consecutive plants
* Note other spots with dead or dying plants
Action Thresholds

• Loss of 0.5 lbs per aphid on each plant

• To prevent economic losses, manage aphids when:

$/lb Aphids / Plant:

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<td>50 – 100</td>
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<tr>
<td>0.25</td>
<td>60 – 120</td>
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<td>0.20</td>
<td>70 – 140</td>
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<tr>
<td>0.15</td>
<td>80 – 160</td>
</tr>
<tr>
<td>0.10</td>
<td>90 – 180</td>
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**Lower # during dry conditions!**
Insect Management for Canola in the Southern Plains

Fall
* Seed treatments prevent fall and winter aphid infestations

January-March
* Look for Turnip and Green Peach aphids
  * Consider insecticide if aphids are increasing above threshold and crop appears injured

April-seed formation
* Look for Cabbage aphid
  * Consider insecticide if seed formation is at risk
  * Avoid use when pollinators are active

*Refer to CR-7667 for management and labeled insecticides for canola
Canola Herbicides
Grasses and Broadleaves

- Assure II, Select, Arrow – Grasses
- Roundup – RR Canola Grasses & Broadleaf's
- Treflan (PPI) – Grasses and Broadleaves
Spray weeds early........
Within 4-6 weeks from emergence
Canola Herbicides - Grasses

• Assure II
  – 8 to 10 oz product – 18 oz / season
  • Cheat,
  • Vol. wheat, rye, oats, and barley
  • Wild Oats
  • No broadleaf control

Emergence to 60 days prior to harvest

**ADJUVANTS**

– Always add Crop Oil at 1%
Canola Herbicides - Grasses

• Select 2 EC (generic)
  – 6 oz product – 16 oz / season
  • Cheat,
  • Vol. wheat, oats, and barley
  • Wild Oats
  • L. ryegrass
  • No broadleaf control

ADJUVANTS
  – Always add Crop Oil at 1%
  – Emergence to prior to bolting
Canola Herbicides – Grasses and Broadleaves

- Roundup PowerMAX– RR Gene
  - 22 oz of product of 5.5 lb/gal salt- 4.5 /gal acid
  - 1 to 3 leaf canola in the fall
  - Sequential application is allowed. 22 + 22 oz
  - Do not exceed 44 oz per season.
  - Sequential applications are recommended.
  - Allow minimum of 60 days from last application to harvest.
Harvest: Direct Harvesting

- Must harvest when ready or moisture below 10%
- Will still have some green pods
- Stalks are green, canola is dry
- Un-even maturity
Harvest: Swathing

- Plants should be swathed when 50-60% of the seeds are black
- Must use draper header
- Packer or Roller is preferred
- The swath is placed on stubble for approx. 6-7 days or until the seed moisture is below 10%.
- Evens maturity faster
Pushing

- Lodges crop forward and closer to the ground
- Protects from wind
- Dry’s naturally

- Need height and thick crop for successful pushing
- Pods keep the crop down
- Push earlier than swath and more acres in a day
Harvesting Pushed Canola

- 2 mph, 30ft swath’s
- Harvest more of plant
- What about header sizes?

- Harvest in opposite direction it was pushed
- 3 weeks after pushed
- Evens maturity
Questions