

Winter Canola Producer's Scouting Guide

Insect Control

- Insects known to attack canola include flea beetles, grasshoppers, cutworms, aphids, sugarbeet root fly and maggots.
- Registered foliar and seed treatment insecticides include *Bacillus thuringiensis*, bifenthrin, deltamethrin, cyhalothrin, lambda cyhalothrin, methyl parathion, clothianidin and thiamethoxam.
- Most of the time, winter canola will recover from insect infestation if the insecticide applications are made at the economic thresholds determined by scouting and sampling.
- Select insecticides carefully and consider options that would protect pollinating insects and natural enemies in general, such as predators and parasitoids.
- Cultural practices such as crop rotation, controlling volunteer canola and wild mustard, and incorporating plant residue into the soil are important insect-management tools.

Key Insect Pests

- | | | |
|-------------------------------|-------------------------------|---------------------|
| • Wireworm | • Imported cabbage worm adult | • Cabbage aphid |
| • Flea beetle | • Imported cabbage worm larva | • Green peach aphid |
| • Fall armyworm | • Southern cabbage worm | • Turnip aphid |
| • Cabbage root fly and maggot | • Cabbage looper | • False chinch bug |
| • Beet armyworm | • Diamondback moth larva | • Thrips |
| • Army cutworm | • Diamondback moth adult | |

Aphids feeding on pods.



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Aphids in Canola.



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Diamondback larvae shot holes in leaves.



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False chinch bug.



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Diamondback moth larva.



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Harlequin bug Lygus MB.



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Insect damage.



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Effects of aphids.



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Disease Control

- Diseases can attack canola at all stages of growth.
- Diseases can be soilborne, seedborne or airborne or spread from infected crop residues.
- Blackleg is the most serious disease for winter canola. It survives in infected seed, infected canola stubble and certain weeds.
- Several seed-treatment products are registered for control of blackleg, including thiamethoxam, fludioxonil, thiram, clothianidin, carboxin and metalaxyl.
- The most important management method to control blackleg is to exclude it from an area by planting only disease-free certified seed treated with a fungicide that is effective against blackleg.
- Azoxyrostrobin is a foliar fungicide that can be used for blackleg control.
- Sclerotinia stem rot – most severe under warm, wet conditions when canola is flowering. Symptoms include prematurely ripened plants and a white, moldy substance on the surface of stems and pods.
- Alternaria black spot – causes pod splitting and early plant death. Black, brown or gray spots on the leaves, stems and pods are the most common symptoms.
- Downy and powdery mildew – the downy mildew fungus causes yellow, irregular patches on upper leaf surfaces, giving the leaf a striped appearance. The powdery mildew fungus is characterized by white, dusty growth on above-ground plant parts.

Key Diseases

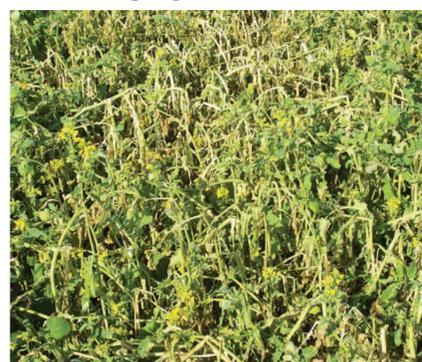
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|-----------------------|---------------------------------|---------------------------------|
| • Blackleg on leaf | • Sclerotinia on stem | • Alternaria black spot on stem |
| • Blackleg on stem | • Sclerotinia in the stem | • Downy mildew |
| • Sclerotinia on leaf | • Alternaria black spot on leaf | |

Freeze damage.



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Hard late spring freeze on winter canola.



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Freeze damage close-up.



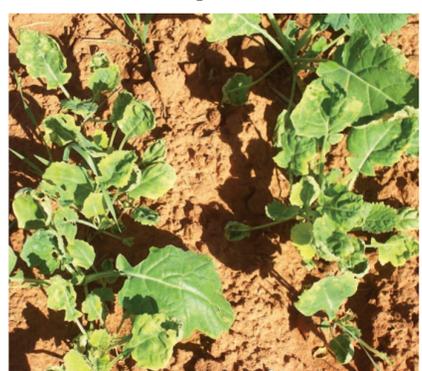
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Improper balance of pH can damage plants.



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Effects of pH on canola.



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Roundup damage on non RR canola.



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Winter Canola Harvest

- Can be straight combined, swathed or pushed.
- Same equipment used for wheat can be used to harvest canola.
- Combines require some modification to handle smaller canola seed.
- Harvest canola when average seed moisture is 8 percent to 10 percent and no green pods are visible.
- Swathing is especially effective for fields with uneven maturity.
- Once canola is swathed, it can be left in windrows on the stubble for 7 to 10 days, or until seed moisture is 8 percent to 10 percent.
- The swathed canola can be picked up by the combine.
- Push winter canola at 35 percent to 60 percent color change, similar to swathing timing.
- Harvest with a header that matches the pusher width.
- Pushing or swathing too early can impact test weight and oil content.



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Tips for Calibrating Your Combine for Winter Canola

- Adjust initial combine settings in accordance with the operator's manual instructions for canola (rapeseed).
- Harvest canola immediately under seed pods to avoid excess trash and green stems moving through the combine and slowing harvest.
- Match the reel speed to the ground speed.
- Slow the cylinder speed to approximately one-half to two-thirds of the setting for most cereals (450 to 650 rpm).
 - Cracked seed indicates excessive cylinder speed.
 - Recommended concave clearances are three-fourths inch on the front and one-eighth to one-fourth inch in the rear.
 - Fan speed is similar to wheat.
 - Do not set fan speed too high because shaking the seed out of the chaff is better than blowing it out.
 - Set the top sieve or chaffer at one-fourth to three-eighths inch for proper separation, and set the lower cleaning sieve at one-eighth to one-fourth inch.
 - Opening concaves more will reduce grinding of green stalks, allowing more material to pass through the combine.
 - By not grinding green stalks, the moisture content of the canola will be lower.
 - Keep an eye on what is coming out of the back of the combine, but do not be concerned if you see a few unthreshed green pods.
 - Canola seed is very difficult to see once it falls onto the ground.
 - It is better to place a small box on the ground ahead of the combine and then look to see what is inside after the combine passes over it.
 - Aim for 2 percent to 4 percent dockage.
 - Tarp all trucks for transport.



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Winter Canola Producer's Scouting Guide

Eight Great Reasons to Plant Winter Canola

- Easy to grow and manage, much like winter wheat.
- Profitable crop.
- Strong regional marketing channels and opportunities.
- Wheat yields and quality are improved by rotation with DEKALB® Genuity® Roundup Ready® winter canola.
- Strong global demand for canola oil due to health characteristics.
- Availability of top-performing DEKALB germplasm with the Genuity® Roundup Ready trait.
- Improved control of feral rye, perennials and other key weeds that affect wheat production.
- Development and availability of Sulfonylurea Residual Tolerant (SURT™) technology that reduces concern of sulfonylurea (SU) herbicide carryover from wheat.



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Planting

Important Criteria for Selecting a Winter Canola Variety

- Winter survival.
- Yield potential.
- Seed oil content.
- Pod-shattering resistance.
- Lodging tolerance.
- Disease resistance.
- Relative maturity.
- Herbicide tolerance such as the Genuity® Roundup Ready trait.
- Seed treatments, fungicides and general plant health components.
- Potential need for SURT based on possible carryover concerns.



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Proper Seedbed Preparation

- Level, firm seedbed.
- Seedbeds that are too fine or overworked are prone to moisture loss and crusting.
- Seedbeds that are too coarse can result in poor seed placement and seed-to-soil contact.
- Make each tillage operation shallower than the previous one.
- Complete the last tillage operation less than one week prior to planting.
- Rollers can be used with or after the last tillage operation.



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Proper Seeding

- Plant no later than 6 weeks before the first killing frost.
- A harvest population of 4 to 10 plants per square foot is ideal.
- Optimal spacing at planting is 6 to 10 plants per square foot.
- The average Great Plains seeding rate is 5 pounds per acre under ideal seedbed and timing-of-planting conditions.
- Drills should be calibrated to ensure desired seeding rates.
- On older drills, a speed-reduction kit might be necessary.
- Seed 0.5 to 1 inch deep when soil moisture is adequate.
- Six- to 15-inch row spacing is ideal.
- Narrower spacing provides quicker canopy closure, reduces weed competition and lessens pod shattering from wind prior to harvest.



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Fertilization

- Collect both surface and profile soil samples.
- Analyze for pH and lime requirements, plant-available phosphorus and potassium.
- Soil profile samples for nitrogen should be taken to a depth of 2 feet.
- A profile sulfur test is recommended.
- Canola requires slightly more nitrogen and sulfur than does wheat.
- Avoid high-nitrogen applications in the fall before planting.
- Only a third of total nitrogen for canola (roughly 30 to 50 pounds per acre) should be applied prior to planting.
- Apply all phosphorus, potassium, sulfur and other soil amendments before the final tillage operation.
- It is important to apply some nitrogen in the fall to meet plant establishment and growth needs.
- Canola responds to late-winter nitrogen topdressing.
- Either solid or liquid forms of nitrogen can be used before green-up in early spring.
- After canola reaches the bolting stage, it is important to use application equipment with narrow tires if possible.



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Cheat Seedhead



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Feral Rye



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Common Chickweed



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Weed Management

- Planting into a weed-free seedbed is essential.
- Weed control before seeding can be achieved with tillage, herbicides or both.
- It is critical to control volunteer cereals and cool-season winter annual grasses when planting winter canola after wheat.
- Attention must be given to herbicide applications made to preceding crops.
- Planting canola following the application of most sulfonylurea and imidazolinone herbicides should be avoided.
- Conventional herbicides currently registered for use in winter canola include trifluralin, ethalfluralin, quizalofop, sethoxydim or clethodim.
- Roundup® branded agricultural herbicides can be applied over the top of Genuity® Roundup Ready winter canola.
- The Genuity® Roundup Ready system provides nonselective control of winter annual grasses and broadleaf weeds, including blue mustard, bushy wallflower, wild mustard, tumble mustard, tansy mustard, flaxweed, pennycress and shepherdspurse.
- Apply up to 22 ounces of Roundup agricultural herbicide in up to two applications no less than 60 days apart.
- The first application is best within 30 to 45 days of planting in the fall prior to canopy closure.
- The second application should be done in the spring after leaf desiccation and prior to bolting.

Henbit



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Jointed Goatgrass (with seed)



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Ryegrass Auricles



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Ryegrass Seedhead



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Ryegrass



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SURT Products

- Sulfonylurea Residual Tolerance (SURT) winter canola products reduce the risk of crop injury to winter canola from carryover of SU wheat herbicides.
- DEKALB is a seed industry leader in SURT technology.
- SURT winter canola products can be grown following wheat that has been treated with some types of SU herbicides.
- Canola plant-back restrictions may not always be listed on the herbicide label.



Winter canola damaged by SU herbicide tank contamination.

Winter Canola Growth Stages

- **Seedling** – emerges 4 to 6 days after planting. The growing point of canola is above the soil between the two cotyledons.
- **Rosette** – the plant establishes a rosette 4 to 8 days after emergence. The rosette features larger, older leaves at the base and smaller, newer leaves at the center.
- **Budding and bolting** – a cluster of flower buds becomes visible at the center of the rosette and rises as the stem bolts or lengthens. Leaves attached to the main stem unfold. The cluster of flower buds enlarges as the main stem elongates.
- **Flowering** – begins with the opening of the lowest bud on the main stem and continues upward, with 3 to 5 or more flowers opening each day. Flowering of the main stem continues for 2 to 4 weeks. Full plant height is reached by peak flowering.
- **Maturing and ripening** – begins as the last flowers fade from the main stem. Seed weight increases and is complete approximately 35 to 45 days after flowering. Average seed moisture of 10 percent with no green seed visible is ideal for harvest.

Seedling



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Rosette



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Budding and Bolting



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Flowering



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Maturing and Ripening



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Special Thanks to:

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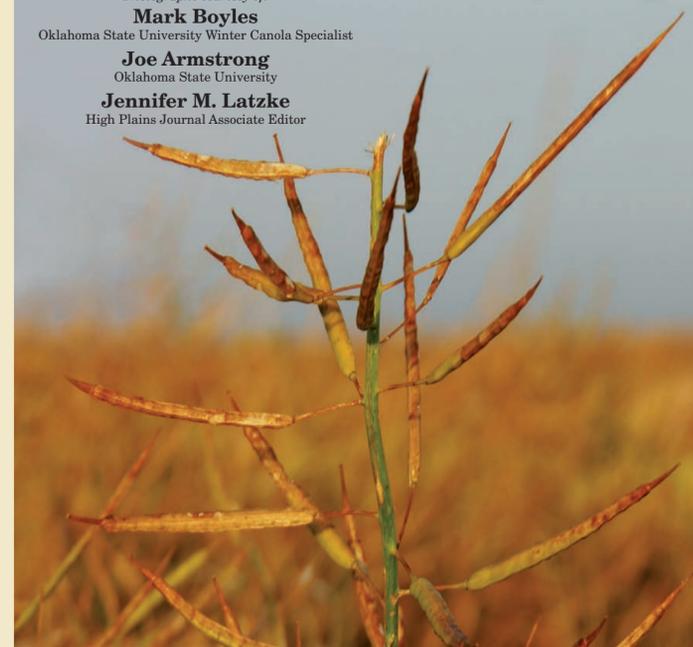
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Ripening



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