

# Canola Injury - Diagnostic tips

The key messages are:

—Keep an open mind when scouting a field for problems. Symptoms can have many causes, and it can be a costly mistake to jump to conclusions before considering all possibilities. Many probable causes were discussed ranging from diseases to insects when describing sick or non emerging plants.

—Environmental stresses like heat during bolting through flowering can cause poor pod set for longer periods than the actual stress event.

The hosts described this hypothetical situation: You're scouting 7 to 10 days after seeding to check for any emergence issues. You notice some cotyledons are turning yellow. Why?

- If it is a growing point injury from Group 2 herbicide carryover, look for increased damage at every point where you'd expect sprayer boom overlaps, and look in the four corners of the field. Corners are a great place to look for herbicide injury symptoms because right in the corner where the sprayer makes a sharp turn, one end of the boom is going so fast, application rates would be a small fraction of normal, so injury symptoms should be minimal, while rates would have been many times higher than normal at the other end, which would have been almost stopped while the machine made the turn.

- Fertilizer toxicity will also occur in patterns, often worse in dryer or lighter parts of the field that don't have the moisture to diffuse fertilizer concentrations beside the seed. You may also notice differences row to row if some openers are worn more than others and not providing required seed/fertilizer separation.

- Flooding can cause yellowing of bottom leaves. Is damage more common in low spots?

- Freeze damage can cause leaves to yellow. Look at the stem. Severe freeze damage will cause browning and drying up of the stem up off the soil surface, closer to the cotyledon.

- Stem and hypocotyl (the part of the seedling's stem at and below the soil surface) damage near the soil surface and below is more likely a seedling disease. Seedling diseases can be more common in canola seeded too deep into cool soils. Because the plant takes that much longer to emerge and because the size of the vulnerable hypocotyl area is that much larger than with a shallow seeded plant, the plant is more susceptible to seedling diseases.

**Canola can over-react to temperature stress.** Symptoms of heat and cold stress during bolting to flower were pointed out on specimens from the various greenhouse treatments. The responsive nature of canola predisposes it to over-react to stresses like heat and exhibit long sections of blanks on flowering stems. Doug discussed the range of harmful temperatures — over 90 F in daytime. Differences in canola pod patterns were pointed out between nutrient stress (starvation mode) versus environmental stresses (shock modes). Typically in a starvation mode the plants will do everything to conserve reproductive parts (pods), whereas shock stresses result in reproductive parts being lost.



Rhizoctonia

Infected

In this case, we know the yellow cotyledons were caused by rhizoctonia disease. In the field, you don't have the luxury of a lab controlled experiment. Diagnosis takes much more effort.