

## Protecting Canola from Clubroot

### Key Points

- Caused by a fungal-like microorganism, clubroot is a soil-borne disease that can spread with soil water, equipment, and wind.
- Increasing in scope and severity, Clubroot can now be found in most regions of Western Canada.
- Even if the disease symptoms are not present (clubroot spores can still be present) in a field, clubroot resistant hybrids are proven to significantly reduce spore propagation or disease establishment compared to susceptible hybrids.
- The most effective strategy for protecting against clubroot pathogens from establishing in your fields is to grow a canola hybrid with built-in genetic resistance combined with a fully integrated pest management approach.

## Tips for proactive clubroot management

### Rotate your crops

- The Canola Council of Canada and Corteva Agriscience recommends a minimum three-year crop rotation.
- When you utilize a one-in-three canola rotation in fields with known clubroot, 90% of clubroot spores in the soil are broken down, so you reduce your spore loads over time.
- With a shorter rotation, high-resting spore loads increase over time, placing additional pressure on CR genetics. This increases the risk of eroding the genetic resistance the industry is developing, and it may impact the sustainability of canola as a crop.
- Prevent and minimize moving soil.
- Clean mud and excessive dirt from equipment to prevent field to field movement.
- Control host weeds and volunteer canola.
- Scout for signs of clubroot and look for virulence shift.
- Practice patch management. If you discover a patch early enough (ex. later flower/early pod fill while gulls are still hard) remove all of the infected plants and destroy. Monitor and consider liming the patch
- Control pH levels in soil with liming.

### Rotate your genetics

- CR1 (1st generation clubroot resistance) remains an option on fields that have never seen detectable levels of clubroot however, growers are encouraged to explore CR packages above CR1.
- Growers who have been using CR1 or have newly acquired land where field history is limited, should consider rotating to alternative clubroot resistant sources. Just as we encourage early deployment of resistance in areas where clubroot might not already be, a proactive approach is the best option here as well.
- Given that keeping spore loads low is key to managing clubroot, there is no reason to wait for CR1 or 1st generation resistance to breakdown before rotating genetics.
- If clubroot has been identified on your land or close by, the goal should be to not grow the same clubroot- resistance genes more than once consecutively.
- Pioneer offers a portfolio of CR hybrids with different sources and combinations of resistance gene stacks.



Clubroot galls on a canola root.

### Agronomic considerations

Pioneer® brand canola is adaptable across Western Canada and delivers high-yielding canola hybrids with extensive clubroot packages.

- Pioneer® hybrids contain consistent multi race clubroot packages. They provide a high level of resistance to the most prevalent race of clubroot (race 3H) and resistance to other races 2F, 5I, 6M, 8N, 3A, 3D, 2B and 5X. Plus, the emerging virulent pathotypes 11A, 8E, 9C and 9E

Have questions on this or other canola related topics? Contact your local Pioneer Sales Representative.