

Understanding resistance

- First-generation resistance is still effective in many fields, depending on local pressures.
- Second-generation or also known as multi-genetic resistance is not all the same: some hybrids are stronger, some are weaker, and stewardship is always required.

What the experts say

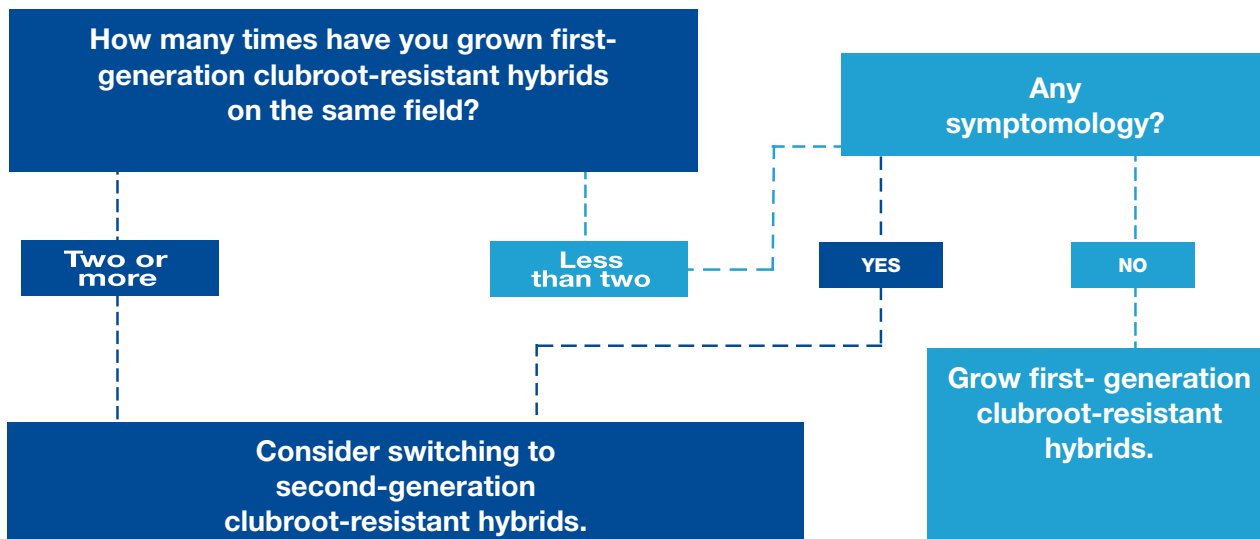
- “Second-generation resistance ... may also be at risk. Not all cultivars are equal.” - *Canola Council of Canada. New clubroot pathotypes and second generation resistance. Research Hub, project summary led by Dr. Stephen Strelkov, University of Alberta (2023)*
- “Growers could soon see clearer, more detailed information on seed labels ... which specific strains a variety resists.” - *Norman, D. Clubroot resistance: what new seed labels would mean for canola growers. Grainews, July 9, 2025*
- “Planting CR cultivars before the disease becomes a problem is key to keeping spores low.” - *Barnes, A. Use Clubroot-Resistant Canola Early to Keep Spores Low. Canola Digest, September 1, 2021.*

Stewardship matters

- Extend canola **rotation** to a minimum of once every three years when possible
- Using **sanitation** and **patch management** to limit the movement of infected soil
- Control volunteer canola and other **brassica weeds** like wild mustard, stinkweed, and Shepherd’s purse that can act as hosts for the disease
- **Scouting** to identify the presence of the disease
- Utilize clubroot-resistant **genetics** as part of an **integrated pest management** strategy .

Selecting a second clubroot-resistant option

Check out our easy-to-follow decision tree:



All agronomic recommendations include thorough scouting and implementing a strong integrated pest management strategy.



For information on when to use first- and second-generation clubroot-resistant hybrids, visit agsolutions.ca/ClubrootDecisionTree

Leading the fight against clubroot.

Our robust clubroot-resistant¹ genetics can help give you exceptional yield potential. In challenging situations where second-generation hybrids are required, you can be confident in choosing clubroot-resistant hybrids for your fields.

3H, 3A, and 3D are the most commercially important pathotypes in Western Canada².

InVigor clubroot resistance	InVigor hybrid(s)	Predominant clubroot pathotype resistance test results													
		2F	3H	5I	6M	8N	3A	3D	5X	2B	8E	8P	5G	9C	9E
First generation	InVigor L330PC InVigor L340PC InVigor L350PC InVigor L355PC InVigor Health L358HPC InVigor Choice LR354PC	R	R	R	R	R	S	S	S	S	S	S	S	S	T
Second generation	InVigor L341PC InVigor L343PC	R	R	R	R	R	R	R	R	R	R	R	T	R	T

¹ All clubroot-resistant InVigor hybrids have been developed to be resistant to the most predominant clubroot pathotypes found in Canada at the time of their registration.

² Source – Hollman et al. 2023. Characterization of *P. brassicae* pathotypes from western Canada 2019-2020
Results may vary on your farm due to environmental factors and preferred management practices.

S Susceptible **R** Resistant **T** Testing

Key takeaway

Clubroot resistance is not one-size-fits-all. The strongest defence is a **portfolio approach + integrated management practices**. That's why InVigor® offers multiple generations of resistance, backed by local trial data and agronomic expertise.

First-generation clubroot-resistant hybrids:



Second-generation clubroot-resistant hybrids:



[INVIGORRESULTS.CA](https://www.invigorresults.ca)

Local data that speaks your language.

InVigor®

BASF
We create chemistry

Always read and follow label directions.

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