

► We Have Clubroot's Number.

Pioneer® brand canola hybrids with the Protector® Clubroot trait provide high yields and protection against multiple clubroot races across Western Canada. They also provide:

- ▶ High yields and leading-edge protection against clubroot
- ▶ Prevention against disease establishment and minimize clubroot spore loads. 85%+ of the Pioneer® brand product line-up offer clubroot protection.
- ▶ Multiple sources of clubroot resistance allowing for a proactive/effective approach to clubroot management

All newly registered Pioneer® brand canola hybrids will include industry-leading clubroot sources to help manage this growing disease threat to Western Canadian farmers.

The Clubroot ratings by canola hybrid below with specific pathotype information can help growers make informed decisions on canola hybrid seed purchases for their farm.

Herbicide Trait	Canola Hybrids	Corteva CR Groups*	Clubroot Pathotypes										
			Initial Pathotypes					New Pathotypes				2020 Pathotypes	
			2F	3H	5I	6M	8N	3A	3D	5X	2B	11A	8E
Roundup Ready CANOLA	45M35	No CR	S	S	S	S	S	S	S	S	S	S	S
Clearfield <small>Production System for Canola</small>	P508MCL	No CR	S	S	S	S	S	S	S	S	S	S	S
Roundup Ready CANOLA	44H44, 45H42, 45CS40	CR1	R	R	R	R	R	S	S	S	S	S	S
LIBERTY LINK	P501L, P506ML, P505MSL, P509L	CR1	R	R	R	R	R	S	S	S	S	S	S
NEW Optimum GLY	P515G	CR1	R	R	R	R	R	S	S	S	S	S	S
Roundup Ready CANOLA	45CM39	CR2	R	R	R	R	R	R	R	R	R	S	S
NEW Optimum GLY	P510G, P511G	CR3	R	R	R	R	R	R	R	R	R	R	S
LIBERTY LINK	P612L	CR4	R	R	R	R	R	R	R	S	R	R	R
Clearfield <small>Production System for Canola</small>	P514CL	CR5	R	R	R	R	R	R	R	R	R	R	R
LIBERTY LINK	P516L	CR6	R	R	R	R	R	R	R	R	R	R	R

Resistant
 Susceptible

*CR groups contain different Clubroot resistant gene packages



Plants showing galls on roots from a canola hybrid with CR1 Clubroot resistance planted on a field with significant clubroot pathotype race shift.



Pictures of race shift in Alberta.

Source: Photo taken July, 2022 near Camrose, AB