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PGRs work in Alberta feed barley study but conditions are key

Environment, lodging risk and timing all play a role in efficacy

JEFF MELCHIOR
REPORTER

A three-year, multi-institutional study on lodging in feed barley determined plant growth regulators (PGRs) can be effective tools for preventing lodging. However, their efficacy is highly influenced by lodging risk and the extent environmental conditions necessitate them.

The Alberta-based project, spearheaded by Lakeland College in Vermilion, tested three feed barley cultivars under varied PGR treatments. From 2022 to 2024, trials were conducted at three locations: Vermilion (central Alberta), Falher (northern Alberta) and Lethbridge (southern Alberta under irrigation).

■ WHY IT MATTERS

Lodging is considered one of the most common crop issues across the Prairies. Plant growth regulators (PGR) have been proposed as a solution but results have been mixed.

"As feed barley production continues to intensify across Western Canada, producers are pushing yield potential with higher nitrogen rates and improved genetics," wrote Balwinder Kumar with Lakeland College, in an email. "However, with higher yields often comes a familiar challenge, i.e. lodging. A crop that looks excellent mid-season can quickly turn into a harvest problem if it goes down.

"Plant growth regulators ... such as Moddus (trinexapac-ethyl) and chlormequat chloride,



A feed barley crop plot at the Farming Smarter research site near Lethbridge. Farming Smarter — a southern Alberta research organization — was a participant in the PGR/feed barley lodging study. PHOTO: BALWINDER KUMAR

are often considered a solution. But many producers still ask: Do PGRs actually pay, and when are they worth using?"

PGRs CREATE LOWER LODGING IN DRY CONDITIONS

The study was conducted at Lakeland College, the Farming Smarter research site near Lethbridge and SARDA Ag Research in Falher. It tested three barley varieties — CDC Austenson, Esma and AB Hague — under nine Moddus PGR treatments including single, split and tank-mix applications with herbicides or fungicides. A series of dry growing seasons over the course of the study presented a unique challenge: lodging pressure was low across the board, including sites under irrigation. This doesn't mean the PGRs had no effect, said Kumar. Rather, plots treated with Moddus regularly saw lower lodging com-

pared to the untreated plots, where lodging often doubled that of the treated plots.

"While this difference is not agronomically meaningful at such low levels, it demonstrates that the PGR was active," he notes. "Under higher lodging conditions, similar proportional reductions could have a much greater impact on harvestability and yield protection."

However, the trend wasn't universal. Yield response varied across the sites based on differences in growing conditions and crop biomass. "This suggests that the yield benefit from PGR application is condition dependent and it is not driven solely by lodging control, but also by improvements in plant structure, canopy efficiency and resource use," explained Kumar.

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CROPS

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Later calving offers less labour and improved profit margins

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