

The objective of this project was to demonstrate the differences in crop dry-down and fall weed control amongst registered pre-harvest herbicide/desiccant options for straight-combining Liberty Link® (LL) versus Roundup Ready® (RR) canola. The field trials were conducted at Indian Head, Melfort, Scott, and Melita from 2017-2019. Timing of the pre-harvest treatments were targeted for 60-75% seed colour change (glyphosate and saflufenacil) or approximately 90% seed colour change (glufosinate ammonium and diquat); however, the actual timings of operations varied.

This project improved our understanding of how straight-combined canola responds to various pre-harvest herbicide/desiccation options with a focus on whole plant and seed dry-down. Despite the reductions in seed and plant moisture that were frequently observed, glyphosate was initially slow and less likely to improve harvestability in drier falls or when applied at later crop stages. When saflufenacil was tank-mixed with glyphosate, the effects on crop dry-down were similar to when saflufenacil was applied alone with glyphosate tolerant (RR) canola and, usually similar to glyphosate applied alone in glufosinate ammonium tolerant (LL) canola (Figures 1 & 2). While there appeared to be some potential for enhanced crop dry-down with glyphosate plus saflufenacil versus glyphosate alone for LL canola, the benefits (relative to glyphosate applied alone) were inconsistent and may not always justify the higher cost of the tank-mix. For RR canola, saflufenacil effects on crop dry-down were also variable (compared to diquat); however, glyphosate plus saflufenacil is the best available option for RR canola growers who prioritize both fall weed control benefits and potential for accelerated crop dry-down. With regard to seed quality, diquat was unique compared to other products as it frequently resulted in elevated green seed levels relative to the other treatments. In any of the cases where green seed levels were high enough to result in downgrading, it could be attributed to the diquat being applied too early. Nonetheless, this is an indication of

how important proper staging is and how sensitive canola can be to down-grading if diquat is applied before the recommended crop stage. While no other products had the impact on green seed that we saw with diquat, various options did occasionally result in reduced seed size; however, such effects tended to be infrequent and inconsistent.

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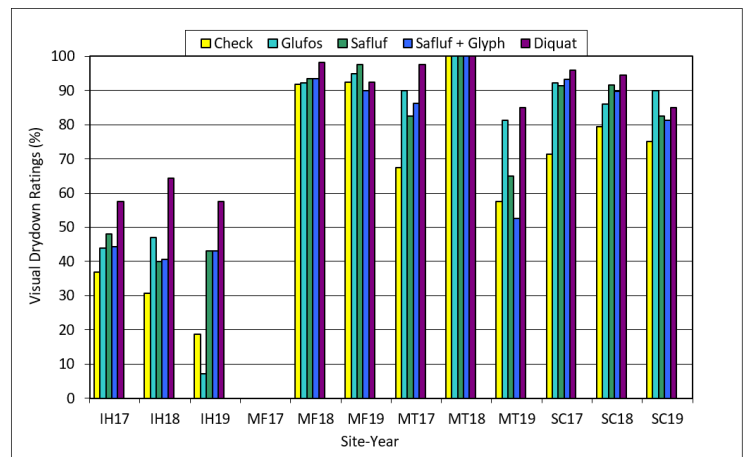


Figure 1. Visual dry-down ratings for RR canola where higher values within a site-year indicate that there appeared to be greater stem dry-down. These measurements were not completed at MF17.

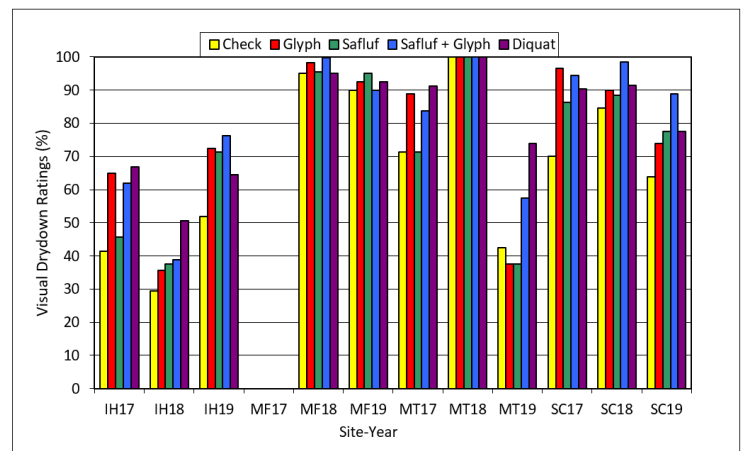


Figure 2. Visual dry-down ratings for LL canola where higher values within a site-year indicate that there appeared to be greater stem dry-down. These measurements were not completed at MF17.