Demonstrating the Benefits of Harvest Weed Seed Control

Herbicide resistance has become a large problem in Canada. With a limited number of registered herbicide groups and a lack of new chemistries being registered, different methods and practices of weed management are needed. Harvest weed seed control (HWSC) includes a variety of different methods and practices for limiting the spread of weed seeds during harvest. The Terminator is integrated into the combine and uses a multi-stage hammer mill for pulverizing weed seeds during harvest.

This project is a continuation of the past Seed Terminator ADOPT project (#20180403) and intends to continue to demonstrate the ability of the Seed Terminator to prevent weed seed return to the seed bank. This project also intends to promote harvest weed seed control as a form of integrated weed management, raise awareness about herbicide-resistant weeds, and provide an option to producers who are concerned about herbicide-resistant weeds on their farms.

A field site located between Rosthern and Duck Lake SK was initiated in 2018. Four strips 10 m x 100 m have been harvested with and without the use of a Seed Terminator. Consistently there have been fewer weeds present in treatments using HWSC. In 2022, spring weed surveys showed approximately 50% fewer weeds in strips that have utilized HWSC.

There were approximately half as many weeds present in strips that have been harvested with harvest weed seed control compared to the control that has been harvested without (Table 1). There were much fewer weeds present at the second weed survey timing due to the competitive nature of the canola crop, but again, treatments that have been harvested with the use of harvest weed seed control have fewer weeds (Table 2).

The species included in the weed surveys were lamb's quarter, sow thistle, shepherds' purse, kochia, wild buckwheat, vetch, cleavers, volunteer oat, mallow, goosefoot, Canada thistle, chickweed, wild oat, and dandelion. Most weeds were very small except for perennial weeds such as sow thistle, Canada thistle, and dandelion.

Table 1. Field survey of total number of weeds present in each treatment in spring and fall.

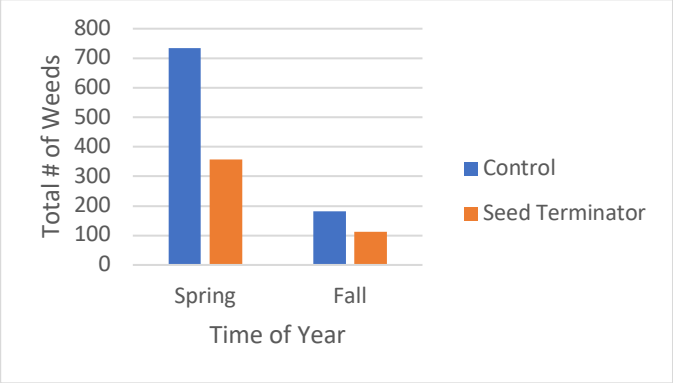
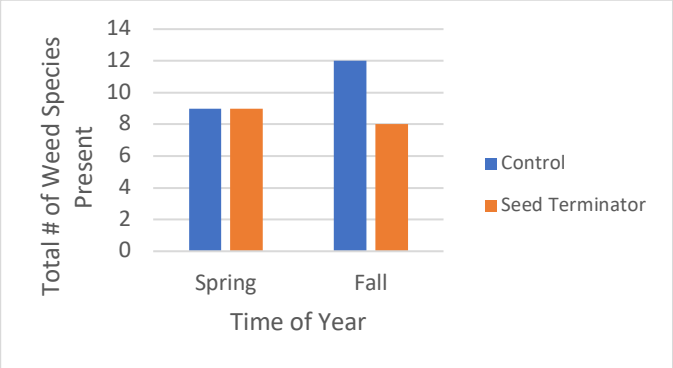


Table 2. Field survey of total number of weed species present in each treatment in spring and fall.



While HWSC is an important tool to deal with herbicide resistance, the presence of perennial weeds is a reminder of the importance of an integrated pest management approach to weed control.

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