

# Factsheet: Implementing herbicide layering techniques to improve weed control in weeds



## Objective:

The objective of this project was to provide producers with a demonstration of available weed control options in peas to promote the use of multiple modes of action herbicide strategies.

## Methodology:

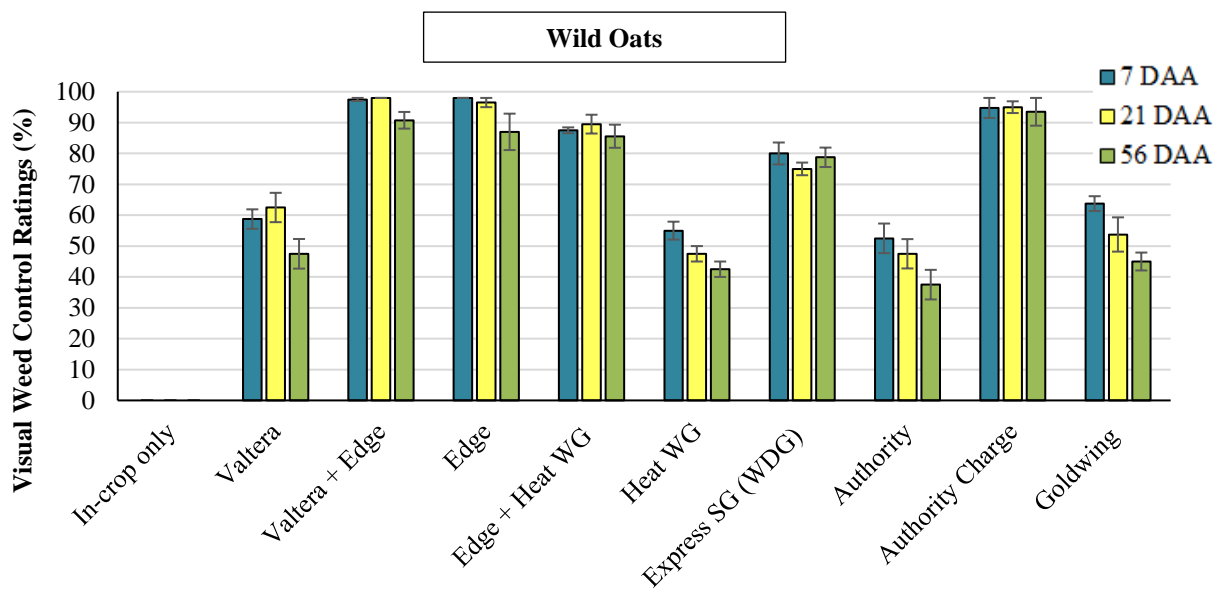
The demonstration was arranged as a RCBD with four replicates at Scott, SK in 2018. Treatment applications combined with glyphosate were made 3 to 5 days prior to seeding. The following target weeds were cross seeded: cleavers (250 seeds m<sup>2</sup>), kochia (200 seeds m<sup>2</sup>) and stinkweed (100 seeds m<sup>2</sup>). The treatments consisted of nine PRE-seed herbicides and one check. All treatments had a single in-crop herbicide application.

Table 1: Treatment list for Implementing herbicide layering techniques to improve weed control in weeds in Scott, SK in 2018.

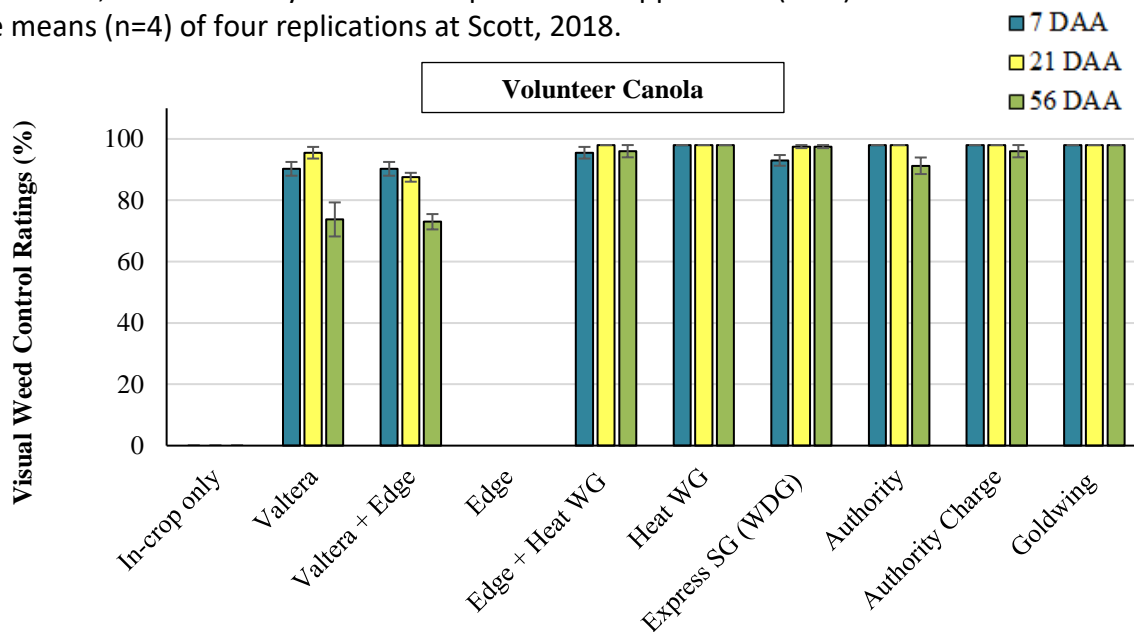
Herbicide Applications	Plant density (plants/m <sup>2</sup> )	Yield (bu/ac)	Protein (%)	Dockage (%)
None	49	31.6	23.25	6.1
Valtera	48	31.6	23.275	4.0
Valtera + Edge	47	34.3	23.125	3.5
Edge	48	32.4	23.05	3.9
Edge + Heat WG	51	35.2	23.25	3.6
Heat WG	54	34.1	22.95	3.9
Express SG ( <i>WDG</i> )	54	34.7	23.375	3.7
Authority	54	33.0	23.15	4.0
Authority Charge	55	35.6	22.775	3.3
Goldwing	55	33.8	23.35	3.8

## Key Findings:

- That multiple mode of action PRE- seed herbicide layering resulted in the most comprehensive broadleaf and grass weed control.
- PRE-seed applications of Edge + Heat WG, Valtera + Heat WG and Authority Charge demonstrated prolonged weed control of both volunteer canola and wild oats (>85%).
- A yield increase of 4 and 3.6 bu per ac from PRE-seed applications of Authority Charge and Edge + Heat WG compared to the in-crop herbicide check were also recorded.
- In most cases except for Valtera applied alone, PRE-seed herbicide applications resulted in an increased yield and reduced dockage compared to the check.
- It should be noted that overall yield differences were minimal and were not significantly different.
- Furthermore, as weed populations were sparse and variable within the plots, interpretation of results should be taken with caution.



**Figure 1.** The effect of pre-seed herbicides on wild oats applied 3 to 5 days prior to seeding field peas. Visual weed control ratings are based on a scale of 0 to 100% with <60% considered poor control; 60 to 69% considered not acceptable; 70% considered suppression; 75% considered good suppression; 80% considered acceptable control; 85 to 90% is considered good to very good control, and 92 to 100% is considered very good to excellent control. Visual ratings were assessed 7, 21 and 56 days after in-crop herbicide application (DAA). Values were derived from the means (n=4) of four replications at Scott, 2018.



**Figure 2.** The effect of pre-seed herbicides on volunteer canola applied 3 to 5 days prior to seeding field peas. Visual weed control ratings are based on a scale of 0 to 100% with <60% considered poor control; 60 to 69% considered not acceptable; 70% considered suppression; 75% considered good suppression; 80% considered acceptable control; 85 to 90% is considered good to very good control, and 92 to 100% is considered very good to excellent control. Visual ratings were assessed 7, 21 and 56 days after in-crop herbicide application (DAA). Values were derived from the means (n=4) of four replications at Scott, 2018.

The full report is available on [www.warc.ca](http://www.warc.ca). This project was funded by the Agricultural Demonstration of Practices and Technologies (ADOPT) initiative under the Canada-Saskatchewan Growing Forward 2 bilateral agreement