

Effectiveness of various herbicides on ALS-tolerant weed beets in cereals

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Introduction

In 2019, the Conviso Smart system was used for the first time in the Netherlands. Control of weed beet to exclude seed production is crucial for the lifetime of the Conviso Smart system. Also the control of weed beet in succeeding crops is important to minimize the survival of aphids and viruses. One of the possible successive crops sown after sugar beets are cereals. Since many herbicides in cereals are ALS-inhibitors, it was interesting to know if these herbicides are effective against ALS-tolerant weed beets. Earlier trials showed that effectiveness of the tested ALS-herbicides on the ALS-tolerant variety was zero, which means that other chemical classes of actives have to be used to control these weed beets in the succeeding cereal crop. Non-ALS-tolerant varieties were easily controlled by most ALS-herbicides. In 2021 a field test was done to show the efficacy of various non-ALS-herbicides against weed beets.

Materials & methods

An ALS-tolerant sugar beet variety was sown and the products were treated in the ten to twelve leaf stage. The following actives from commercial products were tested solo or in combination with each other: MCPA, bifenox, mecoprop-P, fluroxypyr-meptyl and diflufenican. The tested commercial products are given in table 1 and the control of weed beets in figure 1.



Figure 2. Weed beet in winter wheat

Table 1. Tested products (litres per hectare) with used dosage.

object	product (actives)	dose (l/ha)
1	untreated	
2	U 46 MCPA (500 g/l mcpa)	2.0
3	Starane Top (480 g/l fluroxypyr-meptyl)	0.6
4	Duplosan MCPP (600 g/l mecoprop-P)	2.0
5	Fox 480 SC (480 g/l bifenox)	0.5
6	Fox 480 SC	1.0
7	Sempre (500 g/l diflufenican)	0.1
8	Sempre	0.2
9	U 46 MCPA + Starane Top	2.0 + 0.6
10	Starane Top + Sempra	0.6 + 0.1
11	U 46 MCPA + Starane Top + Sempra	2.0 + 0.6 + 0.1
12	U 46 MCPA + Starane Top + Fox 480 SC	2.0 + 0.6 + 0.5

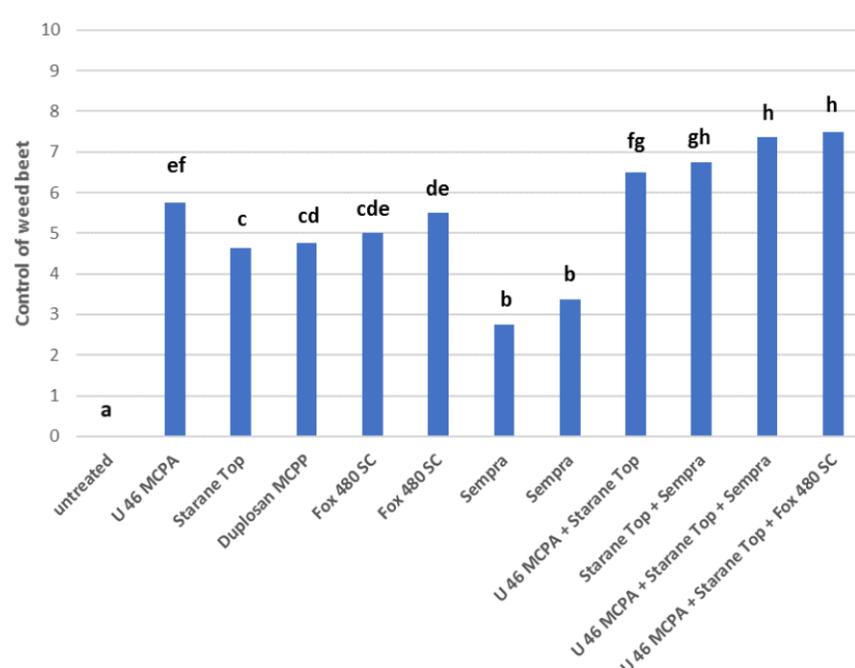


Figure 1. Average control weed beet (ALS-tolerant sugar beet variety) from the assessment 53 days after treatment (0 = no control; 10 = 100% control)

Results and conclusions

- Because ALS-herbicides are not effective against ALS-tolerant sugar beet varieties, herbicides from other chemical classes are necessary to control these weed beets.
- U46 MCPA, Starane Top, Duplosan MCPP and Fox 480 SC did have a clear effect on the weed beets.
- The combinations had a better effect than the products used solo.