Effects of low herbicide dosage on production and fertility of common ragweed seeds

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Materials and methods

The impact of Callisto (mesotrione 100g /L), Primus (florasulam 50g/L), Lontrel 100 (clopyralid 100 g/L) on production and fertility of *A. artemisiifolia* (common ragweed) seeds was investigated at 20%, 40% 80% of the registered dosage. The herbicides were applied in an application chamber equipped with flat fan nozzles operating at a pressure of 2 kPa and a velocity of 2 km/h delivering a volume of 300 L /ha. The common ragweed plants were at BBCH stage 59.

A natural population from an infested farmland (cereal stubble with common ragweed infestation) in the South of Cottbus (Germany) was taken for this experiment. Plants were dug up at the end of July 2012 and transplanted with one plant per 2L pot at BBCH stage 50. The pots were placed outside. Each treatment consisted of 4 replicates.

Two month after application fresh matter and number of seeds per plant were assessed by cutting the plant above soil surface. The number of viable seeds was assessed by the TTC Test, described before in the chapter Biological fundamentals.

Results and discussion

The lowest seed production averaged over all dosages was achieved by florasulam followed by mesotrione and clopyralid (Figure 1Figure). And the lowest viability of the seeds was found in all dosages as follows: florasulam > clopyralid > mesotrione.

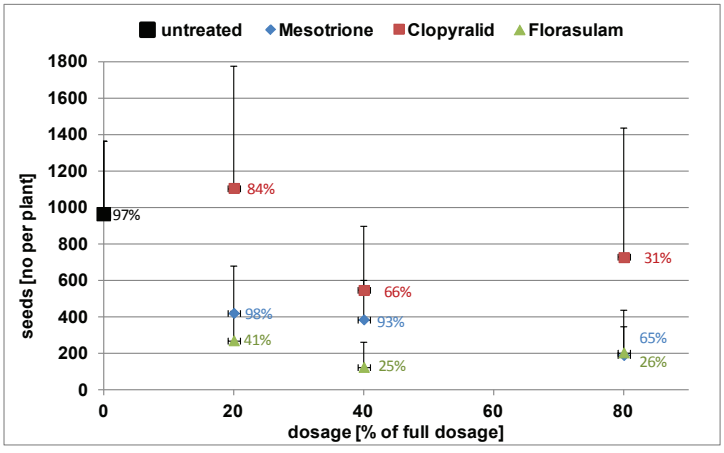

Figure 1: No. of seeds and their viability [%] after herbicide application

Conclusions

Florasulam was most effective in reducing the seed production and their viability even with low herbicide dosages.