

Efficacy of imazamox on *Ambrosia artemisiifolia*

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The herbicidal active ingredient imazamox belongs to the group of imidazolinone (ALS-inhibitor). The uptake takes place through the leaves, primarily and mainly dicotyledonous weeds are affected by imazamox.

Materials and Methods

A glasshouse pot experiment with a three-factor experimental design was conducted in 2013. The impact of imazamox on *A. artemisiifolia* was investigated on two different growth stages (BBCH 21-25 and 51-55) and with four doses: 4, 8, 16 and 32 g /ha. Imazamox was applied as a single and split treatment. The split treatment was applied with 50% of the dose at the same timing as the single treatment and 50% 10 days later. The herbicide was applied in an application chamber equipped with flat fan nozzles operating at a pressure of 2,1 kPa and a velocity of 2 km/h delivering a volume of 300 L per ha.

Seeds were sown in jiffy pots at two timings to obtain two different growth stages. The seedlings were transplanted with one seedling per 2L pot at the BBCH 12. Each treatment consisted of 4 replicates.

6 weeks after application fresh matter of common ragweed plants were assessed by cutting the plant above soil surface.

Results and discussion

Lower fresh matter was observed at high herbicide doses (16 and 32 g /ha) given in single or split applications to the early growth stage at BBCH 21-25 compared to the untreated control (Figure 1 and 2). Fresh matter was higher with plants getting the herbicide application at the late growth stage (BBCH 51-55) and in low doses which can be explained by hormesis effect (Figure 1). At BBCH 51-55 even the highest dose of imazamox applied as single or splitting did not reduce fresh weight of common ragweed

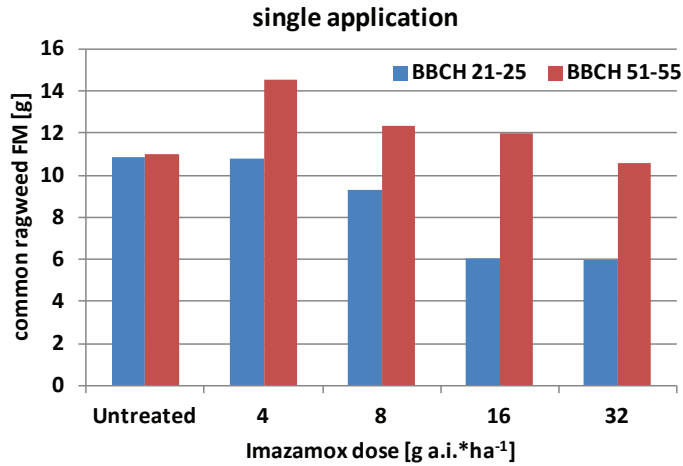


Figure 1: Common ragweed fresh matter [g] 6 weeks after imazamox single application

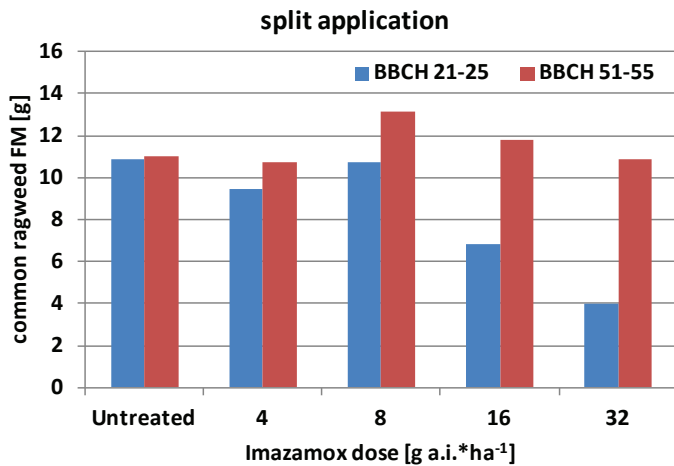


Figure 2: Common ragweed fresh matter [g] 6 weeks after imazamox split application

Conclusions

The highest dose of 32 /ha in a split application at BBCH 21-25 had the best results in reducing the common ragweed fresh matter but did not lead to plants dieback. Under field conditions it could be assumed that even these plants would be able to reshoot and produce seeds.