Herbicide efficacy for common ragweed control after defoliation (Slovenia)

Robert Leskovšek [1], Andrej Simončič[1], Mario Lešnik[2]

[1] Kmetijski inštitut Slovenije/Agricultural Institute of Slovenia, Oddelek za kmetijsko ekologijo in naravne vire/Department for Agroecology and Natural Resources, Hacquetova ulica 17, 1000 Ljubljana, Slovenia; Robert.leskovsek@kis.si;
[2] University of Maribor, Faculty of Agriculture and Life Science, Pivola 10, 2311 Hoče, Slovenia

DOI 10.5073/jka.2016.455.44

The results of these experiments are being prepared for journal submission, so just a short summary is given below.

Summary

To determine efficacy of various herbicides applied to common ragweed immediately after cutting, pot experiment was conducted in Slovenia. Ragweed plants were grown in containers and were clipped 5 cm above soil surface at different growth sages (20, 35, 50 and 80 cm high plants). Herbicides based on glyphosate (1500 g/ha), thifensulfuron (12 g/ha), bentazon (1200 g/ha) and dicamba (385 g/ha) were applied to plants by spraying directly after clipping in such a way that only a certain portion of foliage area remaining after clipping was exposed to herbicide (10, 35, 60, 85 and 100 %). The efficacy (%) of herbicides was determined by weighing and comparing of dray mass of treated and untreated plants at the end of growing season. Results showed that efficacy of herbicides decreased significantly with increasing common ragweed development stage and decreasing leaf area exposed to herbicide application. Only treatments with glyphosate and dicamba at two early growth stages V10 and V18 stage resulted in 90 % dry matter reduction, when total (100 %) leaf area of common ragweed plants was covered with herbicide after defoliation. When very low leaf areas (20-35 %) were treated, the efficacy was low (20-50 %), however seed production of common ragweed decreased by 75-90 %. At least 40 % of leaf area previously defoliated common ragweed has to be covered with herbicide spray in order to achieve 50 % dry matter reduction and 90 % decrease of seed production.