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Fitness of tribenuron-methyl resistant sunflower hybrid

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Abstract

Fitness of tribenuron-methyl resistant (Rsu) and susceptible (S) sunflower hybrids was investigated in 2008 and 2009. Tribenuron-methyl applied at two-three pairs of leaves at amounts 0, 11.25, 22.50 and 33.75 g a.i. ha^{-1}. Plant height, fresh weight, leaf area and relative chlorophyll content were recorded four times (2008: 0, 15, 29 and 48 days after herbicide treatment (DAHT); 2009: 0, 16, 32 and 50 DAHT) on 16 plants. The sunflower seed yield was also measured and seed germination tests were done in Petri dishes at 25 ^{o}C. Each experiment was conducted twice.

Based on the results it was found that application of tribenuron-methyl to Rsu hybrid did not cause visible changes in the fitness (plant height, fresh weight, leaf area and relative chlorophyll content, yield, seed germination, seedlings length and weight) of the treated plants. Herbicide application has affected the leaf area and relative chlorophyll content, only. The highest rate of tribenuton-methyl reduced leaf area 2-8% depending on year and time of measurement, while herbicide application mainly increased relative chlorophyll content in comparison with untreated plants of Rsu hybrid. Although herbicide application affected leaf area and relative chlorophyll content, there is no impact on the yield, which confirms the high resistance level of Rsu hybrid to tribenuron-methyl. Contrary to effect on Rsu, tribenuron-methyl caused significant damage (> 70%) of S hybrid. Therefore, statistically very significant ($p<0.01$) differences between Rsu and S plants were confirmed for all measured fitness parameters.

Biography

Dragana Bozic has completed her Ph.D at the age of 34 years from University of Belgrade-Faculty of Agriculture. She is Assistant Professor of Weed Science. She has published more than 10 papers in reputed international journals and many papers in national journals. She was participant on 6 scientific projects in the past and now she participates on 1 national and 4 international project.