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Allelopathic Effects of Lambsquarters (Chenopodium album) Extract on the Germination and Early Growth of Wheat (Triticum aestivum L.)

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Abstract : In order to evaluate the competitive effects of Lambsqua on the germination and early growth of two wheat (Triticum aestivum L.) varieties, an experiment was conducted in laboratory conditions in researches of agronomy, College of agriculture, Isfahan University of Technology in 2015. A laboratory experiment was conducted on a factorial arrangement in a randomized complete design with four replications. Testing factors include two wheat cultivars (Flat and Atila -4) and three level of Lambsqua (Chenopodium album) extract (30, 60 and 90 percent) plus control with no extract. Twenty-five seeds of each wheat varieties were placed in petri dish, then the root extract of lambsqua, which was prepared previously at three levels, was poured on the seeds in each petri dish. The result showed that allelopathic effect of Lambsquarter on germination, root, and shoot dry weight of two varieties was highly significant. Among varieties, the Atila–4 showed minimum germination at 60% while the Flat showed minimum germination at 90% concentration. In case of root dry weight, Atila–4 was more suppressed as compared to Flat at 60% concentration but at 90% concentration, the both wheat varieties were reduced non-significantly. Shoot dry weight of Flat were decreased non-significantly concentrations except Atila -4 that was more reduced at 60 % than 90% concentration.

Keywords : allelopathy, Chenopodium album, extract, germination, wheat, early growth
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