The effects of organic and chemical fertilizers on yield and essential oil percentage of vegetative parts of *Ocimum basilicum* L.

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Abstract

The cropping of medicinal plants could positively contribute to the income of organic farms as the guidelines for good agricultural practice for medicinal and spice plants demands products which are not contaminated by chemicals. Basil is a medicinal and vegetable crop which is wildly cultivated through the world. To evaluate the basil response to organic and chemical fertilizers, an experiment was conducted at Research Farm of Faculty of Agriculture, Ferdowsi University of Mashhad, Iran, in year 2009. A complete randomized block design with six treatments and three replications was used. The treatments were: 1-control (no fertilizer), 2- cow manure, 3- sheep manure, 4- chicken manure, 5- vermicompost and 6- NPK fertilizers. The results showed that organic manures compared to NPK fertilizers and control treatment were significantly increased many of traits, for instance plant height, leaf yield, fresh and dry matter under vermicompost were higher than other treatments. The highest essential oil yield was obtained under cow manure treatment. The third and the first cuttings had the maximum and the minimum of leaf yield, fresh and dry shoot yield, respectively. Essential oil percentage in the first cut was significantly more than other cuts, but essential oil yield, were the highest in the third cut because of this cut produced the highest leaf yield. There was no significantly difference between NPK fertilizers and control treatment amongst many studied traits. At a glance, the organic fertilizers could be an appropriate alternative for chemical fertilizers to achieve ecological production of basil.

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