

Effects of Organic Fertilizer and Azotobacter and Azospirillum Bacteria on Concentration and Composition of Essential Oil of Coriander (*Coriandrum Sativum* L.)

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Abstract : The main objective of this study was to determine the effects of organic fertilizer and azotobacter and azospirillum bacteria on concentration and composition of essential oil in the coriander essential oil content, essential oil yield, linalool percent, alpha pinene percent and cymene percent in essential oil. The experiment was carried out as factorial experiment in the base of randomized complete blocks design with eight treatments and three replications at research field of Agriculture Company of Ran in Firouzkuh of iran in 2012. The factors were Vermicompost in four levels (0, 3, 6 and 9 ton/ha) and biofertilizer, mixture of *Azotobacter chroococcum* and *Azospirillum lipoferum* in two levels (non-inoculated and inoculated seeds). The present results have shown that vermicompost had significant effects on evaluated traits except linalool percent in essential oil, as the highest essential oil content, essential oil yield and alpha pinene percent in essential were obtained after applying 6 ton/ha vermicompost. The minimum cymene percent in essential oil were obtained after applying 6 ton/ha vermicompost. Biofertilizer also showed significant effects on essential oil yield only. The highest essential oil yield were obtained by using the biofertilizer (inoculated seeds).

Keywords : coriander, vermicompost, biofertilizer, essential oil

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