University of Zabol
Graduate school

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Title

The influence of livestock manure on quantitative and qualitative characteristics of Ajwain (*Trachyspermum Copticum*) under partial root-zone drying with saline water

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Abstract

ha^{-1}. The variance analysis results showed that the interactions effects of different levels of irrigation and livestock manure application rates on thousand seed weight, seed yield, yield of essential oil, and percentage of essential oil were significant. In addition, the simple effect of the levels of irrigation and livestock manure application rates on biological yield, harvest index and number of umbrellas per plant was significant. The means comparison of the interactions effects of irrigation and livestock manure showed that the highest thousand seed weight (1.47 g) was observed under freshwater irrigation with livestock application rate of 30 t ha^{-1}. In addition, freshwater irrigation with livestock application rate of 10 t ha^{-1} resulted in the highest seed yield (44.21 kg ha-1), essential oil (107.44 kg ha-1), the percentage of essential oil (2.4%), the number of umbrellas per plant (28.5 number), and biological yield (199.12 kg ha-1). Nevertheless, the highest harvest index (38.06%) was observed under partial rootzone drying with alternate use of freshwater and saline water.

Keywords: Soil Amendment, Effective ingredient of Ajwain, Partial Root-zone Drying, Sistan plain