

عنوان مقاله:

Physiochemical Properties and Leaf Nutrients of *Satureja mutica* Fisch. & C.A.Mey. Treated with Cattle Manure at Different Plant Densities under Dryland Farming System

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خلاصه مقاله:

The management of plant arrangement and organic fertilizer is an effective practice in agricultural systems particularly in dryland farming condition. The split plot experiment was conducted to evaluate the effect of cattle manure and plant density on essential oil (EO) content, EO yield, photosynthesis contents, leaf nutrients, enzyme activities of *Satureja mutica* Fisch. & C.A.Mey. based on completely randomized block design (CRBD) with three replications during ۲۰۱۸ and ۲۰۱۹. The plants were treated with cattle manure (۳۰ tones ha⁻¹) under high plant density (HPD, ۸۰۰۰۰ plant ha⁻¹), medium plant density (MPD, ۴۰۰۰۰ plant ha⁻¹), and low plant density (LPD, ۲۶۶۶۶ plant ha⁻¹) in dryland farming system. The results showed that the highest EO content (۲.۲%) and EO yield (۱۰.۹ kg ha⁻¹) were observed in the second-year plants with manure application at HPD. Under both HPD and MPD, chlorophyll (Chl) a+b was greater compared to LPD. The higher concentrations of magnesium (Mg) and phosphorous (P) were observed in second-year plants treated with manure application at MPD in comparison with LPD/HPD. Compared to LPD, increased potassium (K) and calcium (Ca) contents were observed at HPD and MPD. The activity of antioxidant enzymes at LPD was significantly higher than other treatments. The use of cattle manure and HPD could increase EO production, but MPD is suggested in improving leaf nutrients of *S. mutica*.

کلمات کلیدی:

essential oil, Enzyme activity, Leaf nutrients, Organic fertilizer, planting arrangement

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