

## عنوان مقاله:

The Impact of Compost on Seed Yield and Essential Oil of Black Cumin under Drought Stress Conditions

## محل انتشار:

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## خلاصه مقاله:

*Nigella sativa* L. is an annual species of the Ranunculaceae family whose essential oil is widely used in the medicinal, food and health industries. Drought stress is a major factor limiting plants growth and yield. The application of organic fertilizer is an effective method in the organic culture of medicinal plants. In order to study the impacts of drought stress and compost on the yield and essential oil content of black cumin, an experiment was conducted as split plots based on a randomized complete block design with three replications in the research farm of the University of Zabol. Treatments involved irrigation as the main factor in three levels: ۱) the control (without any stress), with irrigation interval of every six days; ۲) mild drought stress, with irrigation interval of every nine days; and ۳) extreme drought stress, with irrigation interval of every ۱۲ days along with municipal solid waste compost as the second factor which included: no use of compost (control) and compost of ۱۰، ۲۰، and ۳۰ ton/ha. Drought stress had a meaningful impact on seed yield. Thus, seed yield declined as the stress increased. Increasing compost levels also increased seed yield, essence percentage, p-cymene,  $\gamma$ -terpinene, and thymoquinone contents in seed essential oil of black cumin. The highest seed yield (۵۵۳.۶۱kg/ha), percentage of p-cymene (۲۴.۶%) was observed in the compost treatment of ۳۰ ton/ha and the least of them were (۳۴۵.۲kg/ha) and (۱۵.۴%) in the treatment without compost (the control) respectively. In general, using ۳۰ ton/ha of compost seems appropriate, because of generates higher yield and .essential oil

## کلمات کلیدی:

Medicinal plants, Irrigation interval, Organic fertilizer, Thymoquinone

## لینک ثابت مقاله در پایگاه سیویلیکا:

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