



## Antifungal activities of juniper berry oil (*Juniperus oxycedrus* L.) against *Trichoderma* sp. a causal agent of green mold disease on mushroom (*Agaricus bisporus*)

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**Abstract:** Juniper berries are used commercially for the preparation of essential oil, gin, and as a spice. The Juniper berry (*Juniperus oxycedrus* L.) essential oil has been known since ancient times as a very strong antiseptic, diuretic properties, gastrointestinal irritant properties. In this study, the antifungal activities of different doses (10, 20, 30, 50, 100, 200, 300, 400 and 500 µg/ml) of juniper berry oil were investigated against *Trichoderma* sp., a causal agent of Green Mold disease on mushroom by using volatile and dilution methods. The volatile effect of different doses of juniper berry oil were investigated against *Trichoderma* sp. *in vitro*. Sterile distilled water was used as a control. Antifungal effect of Juniper berry oil was compared with that of *Thymbra spicata* var. *spicata* essential oil (50 µg/ml) which is known a very strong antifungal essential oil. Juniper berry oil had a strong antifungal effect on *Trichoderma* sp. It was thought that this antifungal effect can be result from the presence of some main components as a  $\alpha$ - and  $\beta$ -pinene, myrcene, sabinene, thujone, limonene, etc. This study is the first report on antifungal effect of Juniper berry oil against the fungal pathogen *Trichoderma* sp. a causal agent of Green Mold disease on mushroom.

**Keywords:** *Juniperus oxycedrus*, Juniper berry oil, Green mold, *Trichoderma* sp., Antifungal activity