

Antibacterial activities of juniper berry oil (*Juniperus oxycedrus* L.) against *Pseudomonas tolaasii* a causal agent of brown blotch disease on cultivated mushroom (*Agaricus bisporus*)

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Abstract: The essential oil of Juniper berry (*Juniperus oxycedrus* L.) has been shown to be a very strong antiseptic and flavoring agent, having therapeutic and diuretic properties. In this study, the antibacterial activities of different doses (10, 20, 30, 50, 100 and 200 µg/ml) of Juniper berry oil were investigated against *Pseudomonas tolaasii*, a causal agent of Brown Blotch disease on mushroom by using volatile and serial dilution methods. The volatile effect of different doses of Juniper berry oil were determined against *P. tolaasii* *in vitro*. Sterile distilled water was used as a control. Antibacterial 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 antibacterial essential oil. The dose, 200 µg/ml, of Juniper berry oil had a maximum antibacterial effect on *P. tolaasii*. It was thought that this antibacterial effect can be result from the presence of some main components as a α - and β -pinene, myrcene, sabinene, thujone, limonene, etc. This study is the first report on antibacterial effect of Juniper berry oil against the bacterial pathogen, *P. tolaasii*, a causal agent of Brown Blotch disease on cultivated mushroom.

Keywords: Brown blotch disease, *Juniperus oxycedrus*, Juniper berry oil, *Pseudomonas tolaasii*