

Comparison of Allelopathic Activity of Some Edible Mushroom and Wild Mushroom in Japan

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Abstract : Wild mushrooms have always been considered as valuable source of bioactive compounds, while edible mushrooms have been known for their importance as food source. However, their interaction with plants through chemicals that could lead to find new biochemical have not been well undertaken. A special bioassay method (Sandwich method) was applied to compare eight common edible mushrooms (*Pleurotus eryngii*, *Pleurotus citrinopileatus*, *Pleurotus ostreatus*, *Lentinula edodes*, *Grifola frondosa*, *Flammulina velutipes*, *Hypsizygus tessellatus* and *Pholiota namako*) with some wild species (*Ganoderma appelanatum*, *Amanita pantherina*, *Artomyces pyxidatus*, *Morchella conica*, *Tricholosporum porphyrophyllum*, *Trametes hirsuta*) for their phytotoxicity against lettuce. Among all tested edible mushrooms, application of 5 mg of *P. ostreatus* showed stronger allelopathic activity by inhibiting the growth of radicle and hypocotyl of lettuce by 84% and 63% respectively. Moreover, same amount of *T. porphyrophyllum* exerted 77% and 67% growth inhibition on radicle and hypocotyl of lettuce. In general, biochemicals contributed in tested mushrooms could be the main cause for their inhibitory activity and could lead to find new allelochemicals.

Keywords : allelopathy, interaction, mushroom, phytotoxicity, *Pleurotus* sp., sandwich method

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