

**GROWTH OF BASIDIOMYCETE MYCELIUM (*BASIDIOMYCOTA* R.T. MOORE)
IN NATURAL HABITAT AND LABORATORY CONDITIONS**

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ABSTRACT

The growth of basidiomycete mycelium requires the fulfillment of certain biotope conditions. These requirements are varied but many of them, regardless of species and taxonomic affiliation of the fungus, are common. They include temperature, soil moisture, content of nitric compounds and, in many cases, presence of a partner organism. The latter requirement applies to mycorrhizal fungi which coexist with vascular plants. These include *Boletus edulis* Bull species of flap mushrooms. The symbiotic relationship between fungi and superior plants is a common phenomenon in nature. Biotrophs or mycorrhizal fungi only briefly develop without a partner organism. The benefits of the symbiosis consist in providing the fungus with water and plant assimilates with minerals (Davies 1987, Hali, Williams 2000). Ectomycorrhiza, that is external mycorrhiza, primarily refers to forest mushrooms, *Basidiomycetes*. Their mycelium forms Hartig net structure around roots of plants which aids development of coniferous and deciduous woody plants. The development of the mycelium grown under greenhouse conditions *Agaricus fungi* of the genus belonging to the *Agaricaceae* family – button mushroom (*Agaricus bisporus* (J.E. Lange) Imbach) does not require the presence of a symbiotic partner, hence the success of cultivation of this fungus and the possibility of commercial activities in this area. The aim of the study was to demonstrate the possibility of growing flap mushroom mycelium in laboratory conditions, using the ability of *Boletus edulis* Bull to develop mycelium in early stages of its growth. For this purpose, two parallel cultivation were begun. The first is the briquette cultivation of the button mushroom, the other is the cultivation of the flap mushroom basing on mycelium extracted from a natural specimen and spores of a mature mushroom hymenial layer. Both cultivations retained the same environmental conditions. Observations were made after one month and then in a six-month cycle every month from the moment the cultivation started. The results confirm the initial development of the early stages mycelium in the case of the flap mushroom and its later degeneracy. The development of the button mushroom progresses and is completed when fully formed fructifications are formed. The development of mycelium boletus requires

a partner plant and the duration of its development due to the mutual “recognition” of the symbiotic plant takes time in which the fungus penetrates the ground in search of a partner plant.

Key words: *mycorrhizae, Hartig’s net, mycelium, Boletus edulis*

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