Full Paper _____ *Thematic Section:* Biochemical Research.
Reference Object Identifier – ROI: jbc-02/18-56-12-38 *Subsection:* Biotechnology.
Publication is available for discussion in the framework of the on-line Internet conference "*Butlerov readings*".
http://butlerov.com/readings/
Submitted on November 19, 2018.

Evaluation of the development of *Trichoderma asperellum* VKPM F-1323 on complex nutrient media

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Keywords: *Trichoderma asperellum* VKPM F-1323*,* solid-state fermentation, complex nutrient media.

Abstract

The comparative evaluation of the growth and development of the micromycelial culture of *Trichoderma asperellum* VKPM F-1323 on complex nutrient media was estimated. Solid nutrient wastes from the alcohol industry (dried bard), as well as agricultural, food (straw, bran) and timber (sawdust) industries with controlled moisture values were used as nutrient media. Experimental data indicate that the active growth of mycelium is marked for all media with a ratio of nutrient media: water (hydromodule) = 1: 1. It was shown the best characteristics of growth and development of *Trichoderma asperellum* VKPM F-1323 provides a nutrient media based on bran in the entire range of the humidity of the media (hydromodule 1: 0.6; 1: 1; 1: 1.4).

The development of the fungus was estimated by the cultural-morphological properties of mycelial culture, as well as by the results of determination of the titer of conidial cells in the counting chambers of Goryaev-Tom after incubation for 5 days at a temperature of 25-27 °C.

It is shown that the best media for growing *Trichoderma asperellum* VKPM F-1323 are bran and bard. In this case, the titer of colonies in the process of incubation has grown almost 100 times, which indicates the usefulness of the composition of bran and after-alcohol grain bards, which have a rich amino acid composition, a high content of macro-and microelements, vitamins, phosphorus and carbohydrates and can successfully be used as a nutrient media for the cultivation of micromycetes cultures in the processes of obtaining biological products based on their biomass.

It is also noted that straw is a favorable media for the cultivation of *Trichoderma*. For growth on bard and straw, the development of mycelium is noted not only on the surface, but also deep into the media. In this case, it was concluded that the fungus was not fully mature in the process of incubation on the bard, as evidenced by the white and yellow colonies.

Effective method of accelerating the development of mycelial growth, primarily on hard-to-reach substrates such as sawdust, in the initial period of cultivation is the moisture values of the nutrient media with easily accessible biogenic substances of the Chapek-Doks media was revealed.

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