

## ENVIRONMENTAL INFLUENCE OF SOLID COMPOSITION OF GROWING ON GROWTH AND CHARACTER OF ANTAGONIST FUNGAL STRAINS

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The elaboration of biological products widely based on microorganisms, started with successful use in agricultural practice. On the basis of elaboration of preparations for agriculture stands antagonistic mechanism that exists among microorganisms. In the process of developing of technologies for bioproducts obtaining, it is very important to select the right culture medium. Nutritional needs of organisms are so diverse that there is no a standard medium for all the species. For example, some culture media (agarized Czapek, agarized malt extract, etc.) support the growth of many fungi, and some are specific to a small number, or even a single species. There is a close correlation between conidia germination, germ tube growth rate and colony development mycelia.

The aim of research was to study the influence of solid media composition on growth and development of *Penicillium* strains antagonist.

As objects of the study served strains *Penicillium* sp. 62 and *Penicillium* sp. 97, as test cultures *Aspergillus niger* and *Aspergillus flavus* – pathogens, which cause bee aspergillosis. Morphological and cultural particularities of the strains were studied on 4 agarized media: malt extract, Czapek, Sabouraud, and Starch-ammonia. Antifungal properties of the strains were studied with diffusion method using agar blocks.

The study of morphological and cultural features of strains *Penicillium* sp. 62 and *Penicillium* sp. 97 grown on 4 agarized nutrient media: malt extract, Czapek, Sabouraud, and Starch-ammonia showed that strains grew and developed different on these 4 agarized media. The diameter of *Penicillium* sp. 62 colonies after 14 days of cultivation on agarized malt extract was 4 cm, on Czapek medium – 3 cm, and on Sabouraud and Starch-ammonia media – 2.5 cm. On agarized malt extract and Czapek media the sporulation began with a day earlier.

Strain *Penicillium* sp. 97 grew and developed on all four tested cultural media. Agarized malt extract and Czapek media are more favourable for cultivation of this strain, because it grew and sporulated faster. Also, after 14 days of cultivation, on these media was registered the maximum diameter of the colonies – 3.0-4.0 cm, while on the others media it was 2.5-3.0 cm.

In the study evaluating the influence of the solid medium on the nature antagonist during cultivation of strains *Penicillium* sp. 62 and *Penicillium* sp. 97 against *Aspergillus flavus* and *Aspergillus niger*, it was found that strains act differently. The diameter of the inhibition zone of pathogen *Aspergillus niger* under the action exometabolites of strain *Penicillium* sp. 62 was 30.5 mm, when the last was grown on agarized malt extract, and when it was cultivated on Czapek, Sabouraud, or Starch-ammonia media, the diameter was 28 mm. Zones of inhibition of growth of pathogen *Aspergillus flavus* under the action of exometabolites of this strain cultivated on the same media were: 31 mm, 29 mm, 28, and 26.5 mm, respectively.

Diameter of zones of inhibition of the pathogen *Aspergillus niger* under the action of exometabolites of *Penicillium* sp. 97 grown on agarized malt extract, Czapek, Sabouraud and Starch-ammonia was 15-16 mm, and at *Aspergillus flavus* it was 35 mm, 33 mm, 31 mm and 31 mm, respectively.

According to the results obtained in the study of the action on solid growing medium composition on growth and antagonistic properties of strains of *Penicillium* sp. 62, and *Penicillium* sp. 97 against *Aspergillus flavus* and *Aspergillus niger* pathogens, it was selected agarized malt extract medium, optimal for manifested the largest zone of inhibition of pathogens.