PRESENCE OF *ACTINOBACTERIA* IN THE AQUATIC ECOSYSTEM OF THE "LA IZVOR" LAKE IN THE CHISINAU

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One of the effective ways to obtain new biologically active substances is the search for new strains of microorganisms - producers.

The most active antagonists among microorganisms are actinobacteria: of the 10,000 known antibiotics produced by microorganisms, about 70% are of actinomycete origin. Microorganisms, including actinobacteria, are of interest as enzyme producers, in particular, for the biocontrol of phytopathogenic fungi, as plant protection preparations, as well as for the biodegradation of plant residues, as a reservoir of infection in the soil for agricultural plants, etc.

The task of the research was to study the ability of strains of actinobacteria isolated from the biofilm of the "La Izvor" lake system to exhibit enzymatic activity, as well as to inhibit the growth of a number of phytopathogenic bacteria and fungi.

The objects of research were representatives of 8 genera of actinobacteria isolated from the biofilm of the lake system "La Izvor", Chisinau.

It was established that strain B 2.1 (genus *Actinoplanes*) has weak (+) amylase activity, medium (++) lipase and high (+++) catalase activity. Strain B 3.1 (genus *Frankia*) showed weak (+) catalase and moderate (++) amylase activity. In strain B 4.1 (genus *Geodermatophilus*) a weak (+) catalase activity was noted, as in strain B 6.1 (genus *Nocardia*). The representative of the *Micromonospora* strain B 5.1 was characterized by medium (++) catalase and weak (+) amylase activity. Four strains are representatives of the river. *Streptomyces* showed weak (+) amylase activity, 2 strains of this genus (B 8.1 and B 8.4) also had weak (+) catalase activity, and only strain B 8.1 showed medium (++) lipase activity.

Low antibacterial activity was observed in strain B 5.1 (genus *Micromonospora*) - the diameter of the growth inhibition zones of *Agrobacterium tumefaciens*, *Bacillus subtilis*, *Clavibacter michiganensis*, *Erwinia carotovora* - 9.0 - 14.0 mm. From the strains of genus *Streptomyces*, only strain B 8.3 had the ability to inhibit the growth of 5 phytopathogenic bacteria with a zone diameter of 12.0-16.0 mm.

It was found the ability to inhibit the growth of the phytopathogen *Alternaria alternata* by the strains B 2.1, B 4.1, B 8.3, and B 8.4 (zone diameter - 15.0 - 20.0 mm). The growth of *Fusarium solani* was retarded by 6 strains (zones from 10.0 to 20.0 mm); *Fusarium oxysporum* - by 2 strains (zones 12.0-14.0 mm); and *Aspergillus niger* – by 4 strains (zones 12.0 - 16.0 mm).

Thus, the conducted studies have shown that new strains of actinobacteria isolated from the biofilm of the "La Izvor" lake system, Chisinau, which have shown amylase, catalase, and lipase activity, as well as having the ability to inhibit the growth of a number of phytopathogens, are of particular interest and can replenish the National Collection of Non Pathogenic Microorganisms.

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