SOME FEATURES OF CULTIVATION OF THE ACTINOBACTERIUM *SACCHAROPOLYSPORA SPINOSA*

Lungu A.
Institute of Genetics, Physiology and Plant Protection, Republic of Moldova
e-mail: andrei.lungu@igfpp.md

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Purpose: Actinobacteria (actinomycetes) are in the center of attention because these bacteria produce a variety of natural drugs and other biologically active metabolites, including: antibiotics, enzymes, inhibitors. More than 22,000 biologically active secondary metabolites (including antibiotics) produced by microorganisms have been identified and published in the literature and patented. About half of these compounds are produced by actinomycetes. Currently, about 160 antibiotics are used in medicine and agriculture, 100-120 of these compounds, including streptomycin, erythromycin, gentamicin, vancomycin, vermectin, etc. are produced by actinomycetes. However, the use of actinomycetes for the development of new methods and means is increasingly difficult. Although a large number of microorganisms have been identified, described, verified, more than 90% of all microorganisms remain unutilized. These species could be used intensively to obtain new means, which would contribute to a sustainable development of human society [D. Dhanasekaran, 2016].

Spinosins are new macrolides, natural metabolites produced under aerial fermentation conditions by the species *Saccharopolyspora spinosa*. These compounds contain a unique system of tetracyclic rings to which two sugar residues are attached. Spinosad, a mixture of spinosyns A and D, is used as a unique pesticide with high selective activity against target pests and low toxicity in non-target organisms (including many beneficial arthropods). These characteristics make spinosad a good new tool for integrated pest management. The discovery and characterization of *S. spinosa* represents a new opportunity to develop progressive insect management tools using native products [MERTZ, and YAO, 1990], [Guojun Y, 2016].

Materials and Method: The strain *Saccharopolyspora spinosa* DSM-44228 was used for the experiments. Cultivation was carried out in the initial stages on agar medium and then moved to deep cultivation on liquid medium. We developed and used several compositions of the liquid medium, quantitative changes were made to the components and it was used several sources of carbon and nitrogen. In the same way, the cultivation time, temperature, pH of the culture medium was changed in all variants, the rocking shaker has 150 r/m. As a carbon source, it was used glucose, sucrose, and maltose. As an alternative source it was used also soy, corn, and sunflower flour.

Results: So far we have been able to achieve good growth and sporulation over 7 days on agar medium. On liquid medium we have developed two compositions on which there was a good accumulation of biomass, but they have not yet been determined the amount of produced Spinosad. We are going to carry out the optimization of the medium to achieve a maximum possible production of biomass.

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