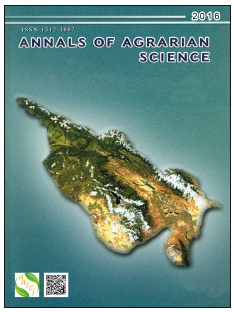
Accepted Manuscript



Amilase-producing mikromycetes isolated from soils of South Caucasus

R.M. Khvedelidze, T.R. Urushadze, L.I. Kutateladze, N.D. Tsiklauri, N.G. Zakariashvili, T.I. Aleksidze

PII: S1512-1887(17)30098-2

DOI: 10.1016/j.aasci.2017.07.005

Reference: AASCI 131

To appear in: *Annals of Agrarian Sciences*

Received Date: 29 March 2017

Revised Date: 1512-1887 1512-1887

Accepted Date: 12 May 2017

Please cite this article as: R.M. Khvedelidze, T.R. Urushadze, L.I. Kutateladze, N.D. Tsiklauri, N.G. Zakariashvili, T.I. Aleksidze, Amilase-producing mikromycetes isolated from soils of South Caucasus, *Annals of Agrarian Sciences* (2017), doi: 10.1016/j.aasci.2017.07.005.

Annals of Agrarian Science vol. 15, no.3, 2017

Amilase-producing mikromycetes isolated from soils of South Caucasus

R.M. Khvedelidze, T.R. Urushadze, L.I. Kutateladze, N.D. Tsiklauri,

N.G. Zakariashvili, T. I. Aleksidze

Sergi Durmishidze Institute of Biochemistry
and Biotechnology, Agricultural University of Georgia
13 km, David Agmashenebeli Ave., Tbilisi, 0159, Georgia

Received 29 March 2017; Accepted: 12 May 2017

Corresponding author:
Rusudan Khvedelidze
r.khvedelidze@agruni.edu.ge

A B S T R A C T

Production of stable enzymes is one of the actual problems in bio- and enzyme technology. Conducting of the fermentation processes at pasteurization temperature is of great importance (2800 strains) because of making possible to minimize pollution of the reaction medium. Collection of micellar fungi isolated from different ecological niches of the Caucasus has been created in Sergi Durmishidze Institute of Biochemistry and Biotechnology. 39 strains - producers of amylase were revealed in the collection as a result of screening. Most of these strains belong to the genus *Aspergillus*. The temperature optimum of thermophilic strains was studied. In the cultural liquids obtained after the submerged cultivation of selected strains α-amylase producers were tested in the temperature ranje 30^0-45^0 C,at 5^0C intervals. The temperature optimum of there strains was establishid to be within the range 65^0-70^0 C, making possible to use them in bio and enzymatic technologies to diminish the pollution of the reaction medium while conducting the fermenteition process at pasteurization temperature (65^0).

Keywords: Enzyme, Fermentation processes, Pasteurization, Thermophilic strain, Pollution.

Introduction

Production of enzymes preparations is one of the leading branches in modern biotechnology and belongs to constantly growing areas of industry with extend application of spheres, in spite of even the crisis phenomena in the world economy. Enzymatic biotechnologies should be considered as low power-consuming, waste less, and ecologically harmless with low risk level processes. The basic problems of application enzymes in the industry are high cost and low stability of the great majority of commercial enzymes far not always satisfying the requirements of industrial processes [1-3]. Latest achievements in molecular biology, genetic and protein engineering, allow the creation of qualitatively new generations of microbial enzymes. Often, enzymes of genetically modified microorganisms, characterized by the improved properties, undoubtedly expand potential for their industrial application. In particular, the stability of commercial preparations of cellulases, xylanases, amylases, lipases, proteases, does not correspond to the industrial requirements. Related to cellulase research, besides comparatively