Faculty of Science

Department: ***Botany***

Name: Mostafa M. El-Sheekh

Title: ***Effective technological pectinases by aspergillus carneus NRCl utilizing the Egyptian orange juice industry scraps***

Authors: ***Mostafa M. El-Sheekh, Abdel-mohsen S. Ismail, Mostafa A. El-Abd. Eman M. Hegazy & Ahmed I. El Diwany***

Published In: International Biodeterioration & Biodegradation63(2009)

Impact Factor: 1.233

Abstract:

The production of a notable and highly effective pectinase by the local fungal strain Aspergillus carneus NRCl utilizing the abundant Egyptian orange peels and pulps (OPP) scraps excluded in the orange juice and canning industry was achieved in 5-days submerged fermentation (SMF) cultures, at temperature and pH ranges of 3.0-5.5 °C and 5.0-5.5 , respectively. Fresh or thawed OPP (6% w/v) were the most preferable sole carbon source, Pectinase activity was dramatically stimulated by ammonium sulphate as the sole nitrogen source, and at the same time strongly inhibited the production of the other tested enzymes, i.e., cellulases and hemicellulases. The lyophilized enzyme preparation was free from any ochra or aflatoxins. The optimum conditions of this methodology including exzyme and substrate (citrus pectin) concentration were 40 mg ml^{-1} and 7% (w/v), respectively, with pH and temperature of 4.0 and 55 C , respectively.

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Department: Botany

Name: Mostafa M. El Sheekh

Title: Antimicrobial activity of the cyanobacteria anabaena wisconsinense and oscillatoria curviceps against pathogens of fish in aquaculture.

Authors: Mostafa M. El-Sheekh; Aida M. Dawah; Azza M. Abdel-Rahman; Hamed M. El Adel & Reham A. Abdel hay

Published In: Annals of microbiology, 58(3), (2008)

Impact Factor : 0.427

Abstract:

Cultures of the blue green algae (cyanobacteria) Anabaena wisconsinenese and Oscillatoria curviceps were isolated from fish farms and their antimicrobial effects wee studied. Solvent extracts of exponential phase algae were screened for antimicrobial activity against different species of Gram positive (Lactobacillus sp. And Bacillus firmus) and Gram negative (Aeromonas hydrophila, Pseudomona fluorescens and Pseudomonas anguilliseptical) bacteria and the fungi (Aspergillus niger and Saprolegnia parasitica) which were all isolated from diseased fish. Maximum antimicrobial activity was observed with ethanolic extract of O curviceps against Lactobacillus sp. And Aeromonas hydrophilia, whereas methanol extracts of A. wisconsinense and O. curviceps had antibacterial effects against B. firmus, A. hydrophila, P. fluorescens, P. anguilliseptica, and the fungi A. niger and S. parasitica. It was also observed that solvent extracts of A. wisconsinense when injected into Oreochromis aniloticus which was already injected intraperitoneally with 2 x 106 CFU/ml P. anguilliseptica significalty decreased fish mortality from 50 to 12.5%.

Key words:

Antimicrobial activity, cyanobacteria, fish diseases.