

ICFOST 83



3rd Indian Convention of
Food Scientists and Technologists

2-4 JUNE 1983 * MYSORE * ORGANISED BY AFSTI&CFTRI

**Third Indian Convention
of
Food Scientists and Technologists**

June 2-4, 1983

A TECHNICAL BROCHURE

**PART A: Symposium Papers on "Food Laws in
Relation To Development of Food
Industries"**

**PART B: Abstracts of Papers for Poster
Sessions**



Jointly Organised by

Association of Food Scientists and Technologists

and

Central Food Technological Research Institute,

Mysore

F 17. EXTRACELLULAR PROTEASES FROM AEROMONAS SPP. AND PSEUDOMONAS SPP.
ISOLATED FROM MACKEREL

T.N. PRATHAPA CHANDRA, L.N. SRIKAR AND I. KARUNASAGAR
College of Fisheries, Mangalore - 575 002

Out of bacterial colonies isolated from Mackerel (*Rastrelliger kanagurta*) one hundred colonies were identified. *Aeromonas* spp. and *Pseudomonas* spp. when grown in casamino acid medium, were found to produce appreciable amounts of extracellular proteases. *Aeromonas* spp. preferred a pH of 7.0 while *Pseudomonas* produced maximum proteases at pH 5.2. Room temperature (25-30°C) was the most favourable for protease production by both the cultures. Shaken cultures produced 4-5 times more enzymes as compared with stationary cultures. Supplementation of the culture medium with Mg and Zn enhanced protease production by *Aeromonas* spp. whereas Mn and Zn showed similar effect on *Pseudomonas* spp. Stationary cultures showed maximum enzyme levels at 72 hr while the shaken cultures attained maximum levels by 24 hr.

Both *Aeromonas* and *Pseudomonas* proteases were found to be alkaline proteases with pH optima of 9.4 and 8.6 respectively.

F 18. ALTERATIONS IN THE GROWTH AND MORPHOLOGICAL FEATURES OF CERTAIN
FUNGAL STRAINS IN THE PRESENCE OF POTASSIUM SORBATE

K.B. JAYAPRAKASH, R.K. LEELA AND R. SANKARAN
Defence Food Research Laboratory, Mysore - 570 011

Fifty fungal strains isolated from a variety of foods in the laboratory were investigated for their tolerance and growth characteristics in the presence of the commonly used food preservative - potassium sorbate. The preservative brought about changes in colony appearance, colour, sporulation, exudates, etc. There was wide variation in the sensitivity amongst the genera. *Trichoderma* tolerated as high as 1500 ppm whereas *Cladosporium* was sensitive at 100 ppm level. Even within the same genus tolerance varied widely. 100 ppm level potassium sorbate could not bring about any significant retardation in the growth of *Aspergillus flavus* and at the same concentration mild retardation on *Aspergillus niger* group was observed. The preservative, therefore could only be selectively used in foods at lower concentrations.

F 19. EFFECT OF CLARIFICATION OF MOLASSES ON THE ETHANOL YIELD AND TOLERANCE
OF SACCHAROMYCES CEREVISIAE (CFTRI 101)

A.A.M. KUNHI, S.C. BASAPPA AND A. SHANKAR MURTI
Central Food Technological Research Institute, Mysore

A strain of *Saccharomyces cerevisiae* (CFTRI 101) has been found to produce and tolerate ethanol upto 15.5% (W/W) in a synthetic medium as compared to 9.5% in case of molasses medium. The reasons for the lower yield and ethanol tolerance of the yeast were suspected to be due to the higher viscosity and various inhibitory substances that may be present in the molasses. Trials were made to eliminate some of the contaminating substances from molasses by treatments with H₂SO₄, Kieselguhr, Chitosan, Indion 286 VC (a cationic resin), Deacidite (an anionic resin) and enzymes such as cellulase, hemicellulase and pectinase. None of the treatments were found to be beneficial when compared to the control. Treatment with chitosan at acidic, neutral and alkaline pH and treatments with enzymes and ion-exchange resins rather decreased the alcohol yield. Supplementation of ion-exchange resin-treated molasses with nutrients such as (NH₄)₂HPO₄, MgSO₄, CaCl₂ and KCl and FeSO₄ also did not show any improvement in the fermentation efficiency and alcohol tolerance.

F 20. SCP AND CELLULASE FROM BAGASSE

S.K. GARG, R.S. RAWAT AND S. NEELAKANTAN
College of Dairy Science,
Mohanlal Sukhadia University, Udaipur

A 10 l fermenter trial was conducted for the production of cellulase enzyme and single cell protein by growing a cellulolytic mould *Aspergillus terreus* GN1 on 1.0% alkali-treated sugarcane bagasse substrate. The crude protein content