

**PS 6 - Chitin and Chitosan Production by *Cunninghamella elegans* UCP 542
in a new economic medium**

N.P. Stamford⁽¹⁾, T.C.M. Stamford⁽²⁻³⁾, T.L.M. Stamford⁽⁴⁾, L.O. Franco^(3,4), A. Rosenblatt⁽²⁾,
G.M. Campos-Takaki^(3,5)

⁽¹⁾University Federal Rural of Pernambuco. Rua Dom Manoel de Medeiros, s/nº, Dois Irmãos, 52171-900, Recife – ⁽²⁾University of Pernambuco State, Brazil – ⁽³⁾Nucleus of Research in Environmental Science, Brazil – ⁽⁴⁾University Federal of Pernambuco, Brazil – ⁽⁵⁾University Catholic of Pernambuco, Brazil

Microbiological process was studied for production of chitin and chitosan by *Cunninghamella elegans* (UCP 542) grown in a new economic medium. A laboratory assay was carried out to evaluate the *C. elegans* growth using Yam Bean (*Pachyrhizus erosus* L. Urban) medium, in different times of growth (24; 48; 72 and 96 hours), under agitation (125 rpm) at 28 °C. The mycelial biomass was determined following lyophilization. Polysaccharides extracted by alkali-acid treatment, were characterized by Infrared spectroscopy, titration and viscosity. *C. elegans* grown in the Yam Bean medium produced higher yields of biomass (24.3 g/mL) in 96 hours of growth, chitosan (66mg/g) in 48 hours of growth, and chitin (440 mg/g) in 72 hours of growth. The polysaccharides showed degree of deacetylation and viscosimetric molecular weight, respectively of: 6.2% and 3.25×10^4 g/mol for chitin, and 85 % and 2.72×10^4 g/mol for chitosan. The results showed a great potential of *C. elegans* grown in the new economic medium with important biotechnological application in medical and agricultural fields. Our results suggest that yam bean medium improves chitin and chitosan production and the mycelial biomass of *C. elegans* may be used as an alternative source of chitin and chitosan.