

BOOK OF ABSTRACTS
1996 IFT Annual Meeting

**Abstracts of
papers presented**

**New Orleans, Louisiana, USA
June 22-26, 1996**



©1996 Institute of Food Technologists
221 North La Salle Street, Suite 300
Chicago, Illinois 60601

Additional copies of this BOOK OF ABSTRACTS will be available after the Annual Meeting @\$25 each (U.S. and Canada) and \$50 each (all other countries) from: Customer Service Department, Institute of Food Technologists, 221 N. LaSalle St., Suite 300, Chicago, IL 60601.

9-9

CHARACTERIZATION ON EXTRACTION CONDITIONS FOR 'STARKING' APPLE POLYPHENOLOXIDASE (PPO)

A. M. C. N. ROCHA; M.P.CANO; M. A. M. GALEAZZI and A.M M. B. MORAIS; Escola Superior de Biotecnologia, U. C. P. Rua Dr. António Bernardino de Almeida, 4200 Porto, Portugal.

Polyphenoloxidase (PPO) activity has been extensively reported, by several authors, as the main factor involved on apple browning. The level of PPO activity at harvest and its variation during fruit storage are obviously of great importance from a technological point of view, as well as the study of different varieties since PPO activity is cultivar dependent.

Although the PPO in apples have been studied scarce information is available on PPO of 'Starking'. An understanding of the specific enzyme is necessary if a more effective means of controlling the enzymatic browning is to be achieved, or at last if a better understanding of the browning mechanism under the specific storage conditions is required.

The aim of this work was to optimize extraction conditions of 'Starking' apple PPO, to evaluate the affinity and specificity of the enzyme toward several substrates. The optimum extraction conditions of fresh-cut 'Starking' apple PPO were obtained with sodium phosphate 0.2M buffer pH 6.5 associated with 4% insoluble PVP and 0.25% Triton X100.

Chlorogenic acid was found to have the highest specificity to 'Starking' apple PPO (lower K_m value) among other *o*-diphenols. Chlorogenic acid was also the best phenolic substrate (higher PPO activity). The optimum pH for 'Starking' apple PPO toward 0.07M catechol was 6.5.

KEYWORDS—polyphenoloxidase, apple; phenolics.