

325 POLYPHENOLOXIDASE ACTIVITY AND BROWNING DURING SOURSOP MATURATION--S.L. Oliveira, N.B. Guerra, M.I.S. Maciel & A.V.S. Livera, Depto. of Nutrition, UFPE, Recife, Pernambuco, Brazil

Soursop fruits at four stages of maturation - green, mature, early ripe and ripe- were submitted to the following procedures: determination of enzymatic activity at pHs ranging from 3.0-8.0, and determination of and phenolic compounds, ascorbic acid, pH and browning intensity. Polyphenoloxidase (PPO) activity decreased during soursop maturation. Also with maturation the other parameters decreased. The best correlation was found between PPO activity and phenolic compounds. Enzyme and substrate can be an important factor in the enzymatic browning of soursop during maturation, the ripe stage being the least favorable to browning.

326 MULTIVARIATE FACTOR ANALYSIS FOR THE ESTIMATION OF RELATIONS AMONG MINERAL ELEMENTS DURING CHEESE MAKING AND RIPENING--R.Moreno-Rojas & G.Zurera-Cosano, Dept. of Food Hygiene and Technology, Univ.of Córdoba, Medina Azahara,9, 14005 Córdoba, España

Eight mineral elements (Cu, Fe, Zn, Mn, Ca, Mg, Na and K) were determined in samples during the cheese-making process, and during its ripening. Correlation matrix around the mean from cheese making and from ripening was used as a starting matrix for the factor analysis. From the factor analysis made during cheese making, we obtained a first cluster of variables formed by Ca, Mg, Zn, Mn and Cu, a second cluster formed by Fe and Na and another cluster formed by K and moisture. During the ripening similar groups were formed but they were of less density. The cluster with most variables had a high negative relation with the first factor, and was formed by Ca, Mg, Zn, Mn, Cu, and Fe. Another cluster with a high positive relation with the first factor was formed by K and moisture; Na had a high positive relation with the second factor but a low relation with the first factor.

1.33

327 INTERRELATION OF COLOUR AND CONSISTENCY WITH CONCENTRATION OF TOMATO PASTE SOLUTIONS -- K.Petrotos, Vitom S.A., 57100 Koufalia, Thessaloniki, Greece, H.Petropakis, Dept. of Chemical Engineering, University of Thessaloniki, 54006 Thessaloniki, Greece.

The effect of different concentrations of tomato paste solutions on both Bostwick consistency and the chromatometric parameters a,b, a/b,L was investigated. The CENCO apparatus and the Hunter Lab D25-PC 2D computerized chromatometer were used. For the experimental work production batches of tomato paste of 28-30 and 36-38 °Brix were sampled. The samples were diluted at different concentrations within a range of 5-14 °Brix and the Bostwick and chromatometric measurements were taken. A set of diagrams was drawn from the obtained data. These diagrams interrelate the Bostwick consistency and colour parameter of the concentrates and the tomato paste solutions and a com-

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puter program is derived translating the findings in comprehensible terms for both the producer and the user of tomato paste.

- 328** ON LINE VISIONIQUE SORTING SYSTEM FOR PEACH INDUSTRY-- A.Davaris, Microgenesis, 10561 Athens, Greece, J.M.Le Dizes, Transexpert, 13510 Equilles, France, H.Petropakis, Dept. of Chemical Engineering, University of Thessaloniki, 54006 Thessaloniki, Greece. 1.32

Computer vision system(visionique,CV)is presented for on-line quality control during production of canned peaches. This technique performs sorting of defective half-peaches that contain pits,pit fragments,foreign blemishes,have green color,are off-cut. It operates at industrial speeds and includes an orientation system,ensuring cup-up or cup-down placement of fruits and a transport system allowing observation of every piece passing through the CV. The CV is composed of lighting system, CCD Camera, Analog/digital converter, computer hardware and software identifying blemishes and giving signal to monitor which performs sorting by rejecting 98% of defectives. This technique coupled with delayed light emission (DLE) measurements enables the development of a complete sorting system which assures manufacturing of better quality products and increases productivity.

- 329** FLOW PROPERTIES OF MODEL FOOD POWDERS -- KYU-SEOB CHANG,D.W.Kim and Y.K.Min, Dept. of Food Technology, Chungnam National University, Taejon 305-764, Korea

The model food powders were prepared by simulating wheat protein and potato starch powder. Their flow properties such as relaxation, asymptotic relaxed modulus, shear stress, internal friction angle, cohesion, repose and slide angles were investigated with Universal Testing Machine(Instron), tension gauge and some apparatuses made by laboratory at different moisture content and composition ratio of protein and starch. Results show that relaxation were 96.4% in potato starch and 88.8% in wheat protein but 93.6% in 1:1 ratio of starch and protein at 6% moisture content. Cohesion was 8.8g/cm³ in potato starch and 19.7g/cm³ in wheat protein, and model food powder in 1:1 ratio of starch and protein was 14.2g/cm³. The slide and repose angle were 26.2° and 35.6°, respectively, in model food powder. The regression equations were obtained at different moisture content and mixing ratio.

- 330** MODIFICATION OF WHEAT GLUTEN--J.M. Vereijken & P. Kolster, Agrotechnological Research Institute (ATO-DLO), Wageningen, The Netherlands.

Wheat gluten, the proteinaceous mass obtained by washing a dough with water, is now mainly used as an additive in bread making. To enhance its applicability the effects of chemical and enzymatic modifications on some functional