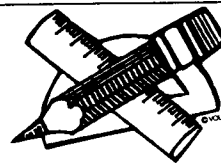


# Abstracts



EDITOR: S. KORITALA • ABSTRACTORS: N.E. Bednarczyk, J.C. Harris, M.G. Kokatnur, F.A. Kummerow, G. Lakshminarayana, G. List, B. Matijasevic, K.D. Mukherjee, D.B.S. Min, R.A. Reiners, and P.Y. Vigneron

## • Edible Proteins

UNIT OPERATIONS OF HYDRODYNAMIC PROCESS FOR SPINNING OF PROTEINS. F. Castaigne, E. Liber, L. Carbillet, M. Boulet and R.R. Riel. *Rev. Fr. Corps Gras*, 24, 315-9 (1977). The manufacture of protein fibers involves complex phenomena. Among all the parameters which interfere in the unit operations of hydrodynamic process, some are critical, for instance: extrusion rate of the spinning suspension, and rate of coagulating bath; the texture and diameter of fibers are depending on these parameters.

THE TRYPTOPHAN CONTENT OF THE U.S. COMMERCIAL AND SOME SOUTH AMERICAN WILD GENOTYPES OF THE GENUS *ARACHIS*. A SURVEY. J. Amaya-F., C.T. Young and R.O. Hammons. *Oleagineux* 32(5), 225-9 (1977). The tryptophan content and its relationship to total protein were studied in the 37 commercial varieties or advanced breeding lines of peanuts (*A. hypogaea* L.) grown in the United States and in 64 plant introductions of the genus *Arachis* from South America. A highly significant correlation ( $r = 0.47$ ) was found between the tryptophan and the total protein content among all genotypes. Deviations from this correlation, however, indicated that the « high-protein » genotypes did not necessarily contain the highest proportions of tryptophan to protein. In some cases, protein increments affected by environmental factors resulted in significant decreases of tryptophan-to-protein ratios. Variations of both protein and tryptophan were substantially greater among the wild than among commercial genotypes. Protein varied in the commercial peanuts from 20.2 (Florunner) to 30.4 p. 100 (Improved Spanish 2-B), and tryptophan percent in the protein ranged from 1.05 (Spanette) to 1.40 (Virginia Bunch 46-2). Among the wild genotypes, protein varied from 20.7 (A. sp. P. I. 338297) to 33.5 p. 100 (A. sp. P. I. 338279), whereas the percent tryptophan in the protein ranged from 0.84 (A. sp. P. I. 289639) to 1.66 (A. *villo-sulcarpa* P. I. 336985; an apparently promising genotype). These data also showed that, in relation to the spectrum of wild genotypes analyzed, the majority of the U.S. commercial varieties contain a medium-high level of tryptophan.

## • Drying Oils and Paints

ARYL DERIVATIVES FROM CASTOR OIL. PART II. PHENYLATED METHYL RICINOLEATE. H.N. Arsanious and Z. Sawiris (Chemical Department, Ministry of Industry, Cairo, Egypt) and F.G. Baddar (Department of Chemistry, Ain Shams University, Cairo, and Kuwait University, Kuwait). *J. Indian Chem. Soc.* L111, 801-7 (1976). The reaction product of methyl ricinoleate with benzene in the presence of anhydrous aluminium chloride was studied by chromatographic methods (TLC, column and GLC). The identification of the different components in the reaction mixture was accomplished by gas chromatography-mass spectrometry. Evidence for the presence of diphenyl saturated esters, in addition to monophenyl unsaturated esters was obtained. From the mass spectra, the location of branching in the fatty acid chain was studied. Phenylation gave position isomers with substitutions at carbon 5 to carbon 17 in the fatty acid chain.

ARYL DERIVATIVES FROM CASTOR OIL. PART I. METHYL ARYL-UNDECANOTE AND PHENYLUNDECANOL. H.N. Arsanious and Z. Sawiris (Chemical Department, Ministry of Industry, Cairo, Egypt) and F.G. Baddar (Department of Chemistry, Ain Shams University, Cairo, and Kuwait University, Kuwait). *J. Indian Chem. Soc.* L111, 797-800 (1976). The condensation products of methyl undecanoate with benzene, toluene, *m*-xylene, anisole and chlorobenzene, and of undecenyl alcohol with benzene using anhydrous aluminium chloride as condensing agent were oxidised by chromic acid. The resulting alkyl aryl ketones were analysed by GLC and were found to be a mixture of

six isomers with aryl group on carbon 5 to carbon 10 of the paraffinic chain.

UTILISATION OF LINSEED OIL DERIVATIVES IN ULTRAVIOLET-CURABLE SYSTEMS. I. SYNTHESIS AND EVALUATION OF AZIDE DERIVATIVES. Z.W. Wicks, Jr. and J.P. Pfau. *J. Radiation Curing* 3(4), 2-8 (1976). Aromatic and aliphatic azide derivatives of linseed oil have been synthesized and evaluated in UV curing systems. An aromatic azide derivative gave very fast surface cure but did not through cure even on prolonged exposure. Evidence was obtained pointing to rapid formation of highly absorbing photoproducts in the top layer which effectively screened UV radiation from lower layers of the film. An aliphatic azide derivative did cure but 3-5 secs. were required for cure of thin films with photosensitisers. (World Surface Coatings Abs. No. 420)

MECHANISM OF INHIBITION OF OXIDATION REACTIONS BY METAL COMPLEXES. I. KINETICS OF OXIDATION OF PENTAERYTHRITOL ESTERS OF MONOCARBOXYLIC ACIDS BY MOLECULAR OXYGEN. G.A. Kovtun, G.L. Lukyanova, A.S. Berenblyum and I.I. Moiseev. *Izv. Akad. Nauk* 1976(10), 2179-82. Pentaerythritol esters of monocarboxylic acids at 95-210° C oxidise by a free-radical mechanism with a four-fold breaking of the chains. Kinetics of the oxidation steps at 110-140° C have been studied. (World Surface Coatings Abs. No. 419)

CASTOR OIL AND ITS DERIVATIVES IN SURFACE COATINGS. K.T. Achaya. *J. Col. Soc.* 16(3), 10-3 (1976). The preparation and properties of dehydrated castor oil are reviewed and the process of urethane formation from the oil is discussed. Possible uses for the pyrolysis products of castor oil are investigated, together with those of other castor oil derivs. (World Surface Coatings Abs. No. 420)

POLYESTER ADDITIVES AS VISCOSITY INDEX IMPROVERS. A.K. Misra, G.C. Misra and L.M. Pande (Defence Materials & Development Establishment, Kanpur 208 004, India). *Indian J. Technol.* 14, 495-9 (1976). Sixteen polyester additives were synthesized and their viscosity index improvement characteristics vis-à-vis Plexol-710 and LZ-3140 in mineral lubricating base oils were investigated. Additives AKP-6878, AKP-4025 and AKP 80 showed multifunctional behaviour while AKP-6878 and AKP-84 showed good shear stability. AKP-84, a copolymer of lauryl methacrylate and methyl methacrylate in the ratio 65:35 was found to give the best performance in paraffin bases.

ADHESION OF SURFACE COATINGS. M.N. Satyanarayana, P.S. Sampathkumaran and M.A. Sivasamban (Regional Res. Lab. Hyderabad 500009, India). *Packaging India* 8(4), 34 (1976). Some of the factors that control the adhesion of surface coatings to various substrates are discussed. The most important among these are (1) surface preparation/treatment, (2) physical nature and chemical composition of the coatings, (3) the method of application, thickness of the film and curing system and (4) the environmental conditions during curing.

STUDIES ON THE POLYMERIZATION OF SAFFLOWER OIL IN A EUTECTIC SALT BATH. PART II. A.E. Rheineck and S.N. Koley (College of Chemistry and Physics, North Dakota State Univ., Fargo, N. Dak., USA). *J. Indian Chem. Soc.* 53, 386-90 (1976). Safflower oil was passed through an eutectic bath (300-320C) of 54.5% KNO<sub>3</sub> and NaNO<sub>3</sub>. In some cases lead oleate (0.2% as lead) catalyst was used. Bodied safflower oils of viscosities 0.84-2.4 stokes were obtained. They separate into 2 layers on standing. The bodied mass was separated into 2 fractions using 2 vols. of dry acetone at room temp. The free fatty acids were extracted. Methyl esters of the free fatty acids and of the acetone-soluble fraction were prepared and analysed by GLC using DEGS and Apiezon-L columns. A number of new fatty acids were found to form.