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shown to consist of 42.1% neutral lipids, 30.8% glycolipids and 27.1% phospholipids. Triglycerides and steryl esters were the major lipids of the neutral fraction. Among the phospholipids, phosphatidyl ethanolamine, phosphatidyl choline and phosphatidyl inositol were the most abundant. Galactolipids and steryl glucosides were also present. Fatty acid analysis of the three major lipid groups showed that stearic, palmitic, oleic, linoleic and linolenic acids were the most abundant.

**GAS CHROMATOGRAPHIC DETERMINATION OF MONO- AND DI-BASIC ACIDS.** E.P. Crowell, S.M. Aronovic and B.B. Burnett (Union Camp Corp., P.O. Box 412, Princeton, N.J. 08540). *J. Chromat. Sci.* 9, 296-300 (1971). Ozonolysis of unsaturated fatty acid products from natural sources, such as tall oil, yields a complex mixture of mono- and di-basic acids. The GC procedure presented for the analysis of these materials is capable of measuring the concentrations of C<sub>1</sub> to C<sub>16</sub> monobasic and C<sub>2</sub> to C<sub>14</sub> dibasic acids. Methylation at room temperature using anhydrous methanol-HCl was found to be an effective and convenient derivatization technique. Zinc oxide neutralization of the mineral acid allowed direct chromatography of the methanol solutions. All principal components were sufficiently resolved to allow good quantitative measurement except for the esters of decanoic and succinic acids. To maintain reproducibility, it was necessary to add water to the helium carrier gas.

**ANALYSIS OF MIXTURES OF FATTY ACIDS, PRIMARY AMIDES AND THE CORRESPONDING N-ACYL AMIDES.** T. Nakagawa, J.H. Vermeer and J.R. Dean (Res. Dept., Chemcell Limited, P.O. Box 99, Edmonton, Alberta, Canada). *J. Chromat. Sci.* 9, 293-5 (1971). A GC procedure for the separation and analysis of water, acetic acid, propionic acid, butyric acid, acetamide, propionamide, butyramide and the corresponding N-acyl amides is described. Chromosorb 101 is used as the column packing. GC/MS spectrometer coupling and NMR were used to verify the procedure. The mass spectra of the N-acyl amides are presented.

**ANTIOXIDANT POTENTIAL OF TEMPEH AS COMPARED TO TOCOPHEROL.** L.V. Packett, L.H. Chen and J.Y. Liu (Dept. of Nutr. and Food Sci., Univ. Ky., Lexington, Ky. 40506). *J. Food Sci.* 36, 798-99 (1971). The ability of tempeh to preserve tocopherol-stripped corn oil was studied. Tempeh (25 or 50%) was mixed into corn oil and incubated at 37C for a maximum of 6 weeks. Peroxide values were determined periodically. Results showed that tempeh can effectively prevent lipid oxidation; 50% tempeh in corn oil showed higher antioxidant potential than 25% tempeh, 0.01% alpha-tocopherol or 0.03% alpha-tocopherol. This study substantiates the antioxidant potential of tempeh and suggests its use with other foodstuffs to help preserve the lipids contained therein.

**DETERMINATION OF MOISTURE AND OIL CONCENTRATION IN FEEDSTUFFS BY FOUR DIFFERENT METHODS.** Lynn Crook and W.P. Williams, Jr. (Dept. of Food Science and Biochem., College of Agr. and Biol. Sciences, Clemson Univ., Clemson, S.C. 29631). *J. Ass. Off. Anal. Chem.* 54, 756-9 (1971). The moisture content of feedstuffs was determined by 4 methods: drying (1) over sulfuric acid to constant weight and (2) *in vacuo* 5 hours at 95C, and direct extraction with (3) ethyl or (4) petroleum ether, assuming that the difference between weight loss of the moist sample upon extraction and the oil recovered represented the moisture content. Statistical analysis indicated that 1 > 2 > 4 > 3. The oil content of feedstuffs was determined by petroleum or ethyl ether extractions of moist samples and of samples dried by 1 and 2. No significant difference existed between the corresponding petroleum and ethyl ether extractions. However, the amount of oil extracted from samples dried by 2 was significantly less than that extracted from moist samples or samples dried by 1.

**INFLUENCE OF AGE ON TOTAL LIPIDS AND PHOSPHOLIPIDS OF TURKEY MUSCLE.** R.M. Wangen, W.W. Marion and D.K. Hotchkiss (Depts. of Poultry Sci. and Statistics, Iowa State Univ., Ames, Iowa 50010). *J. Food Sci.* 36, 560-62 (1971). Ten turkeys (Williams' strain) were randomly selected at 4-week intervals from 4 to 28 weeks to study muscle lipid composition. Lipids were extracted from thigh and breast samples with cold chloroform-methanol (2:1). Proteins of the extract were used to determine total lipid, individual phospholipids and total phospholipids. The lipid content of thigh muscles increased with advancing maturity, whereas breast

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## Northeast Section Honors Hans Kaunitz With Achievement Award



Don Fritz, above left, presents the 1971 Achievement Award of the Northeast Section of AOCs to Dr. Hans Kaunitz, Professor of Pathology at Columbia University in New York. Pictured below are some of the members who gathered at the Section's September 14th Award Night. Directly below, from left to right, are Arthur Wrigley, H. Kaunitz, Ruth Ellen Johnson, Mrs. H. Kaunitz and Mrs. A. Wrigley. Pictured at bottom of page are Roland Steinkoenig, Ursula Bleyer, Mrs. H. Kaunitz, H. Kaunitz and Glen Jacobson.



**POPE TESTING LABORATORIES, INC.**  
Analytical Chemists

2618 1/2 Main

P.O. Box 903

Dallas, Tex.