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Chile . . Enrique Amadori

Vegetable oil production and consumption during 1972

This year Chilean vegetable oil production will reach the figures shown in the table below.

Vegetable oil	Metric tons
Crude rapeseed	24,000
Crude sunflower	5900
Crude soybean	300
Total	30,200

The total consumption will be 77,770 metric tons of fully refined oil (10% more than the past year); therefore it will be necessary to import ca. 49,000 metric tons of vegetable crude oil (soybean and rapeseed oil) and 10,000 metric tons of soybean seed required because of the expansion of poultry, swine and livestock production.

Research in marine oils

The Department of Food Science and Technology of the Faculty of Chemical Sciences (Faculty of Chemistry and Pharmacy) of the University of Chile has developed several research programs in the field of marine oils. One of these programs is the study of the fatty acid composition of marine oils; Chile has a great variety of species of fish and shellfish used for edible and industrial purposes. This program is under the direction of Lilia Masson.

The fatty acid composition of the oil extracted from the body of Chilean anchovy and its neutral and polar fraction were studied between May and September 1969. From the data obtained, it is possible to say that the oil and all its fractions have a high amount of palmitic, oleic,docosahexaenoic, myristic and palmitoleic acids. Great variations in their concentrations during the study period were not observed. A prevalence of saturated acids, 41.7% and 44.5%, over the unsaturated acids, 29.6% and 27.0%, was observed in the oil and the neutral lipids, respectively. A higher amount of polyunsaturated fatty acids, 34.8%, 37.3% and 37.1%, in the total polar fraction, cephalines and phosphatidyl choline, respectively, was obtained. Docosahexaenoic was the main acid. A lower value for the saturated acids was determined. Palmitic acid constituted ca. 78% of the total saturated acids. In all fractions, monoenoic acids was present in ca. 25%.

The lipids extracted from two shell fish were studied: (1) Piure (Pyura Chilensis) and (2) Macha (Mesodesma Donacium). The fatty acid composition of the total extract and its neutral polar fractions was determined.

In piure the main fraction (92.1%) is made up of neutral lipids, of which triglycerides constituted 87.6%. In the polar fraction (7.9%) the main components are phosphatidylcholine, phosphatidylserine and phosphatidylethanolamine. Eicosapentaenoic acid is the most important fatty acid in the total extract, phosphatidylserine and phosphatidylethanol amine, in the triglycerides is palmitic acid and stearic acid in phosphatidylcholine. According to unsaturation, monounsaturated acids prevail in the total lipids and in the triglycerides, saturated acids in phosphatidylcholine, and polyunsaturated acids in phosphatidylserine and phosphatidylethanolamine.

In macha, neutral lipids represent 66.8%, including 56.0% of triglycerides and 9.6% of free cholesterol. Polar lipids amount to 33.2%. Palmitic acid is the most important fatty acid in all the fractions, with the exception of phosphatidylethanolamine. Saturated acids are the main constituents of all the fractions, with the exception of phosphatidylethanolamine.

Czechoslovakia . . J. Pokorny

The XIth National Meeting on Technology and Analysis of Fats and Oils, sponsored by the Czechoslovak Chemical Society, took place in Manor Liblice on May 15-16, 1972. Among 30 papers presented, the most interesting ones concerned the mechanism of interesterification and continuous hydrogenation of vegetable oils (Zajic and coworkers, Prague). Franzke of Berlin, Germany, reported on the optimum conditions of rapeseed oil refining and the limits of minor impurities in refined oils. Zwierzykowski of Gdansk, Poland, discussed the kinetics and thermodynamics of autoxidation of unsaturated fatty acids. Various applications of gel permeation chromatography in the analysis of fats and other lipids (antioxidants, unsaponifiables and detergents) were shown by Coupek and Pokorny. A group of papers concerned gas liquid chromatography of fatty acids, including the separation of *cis* and *trans* isomers and positional isomers, and the analysis of tocopherols and sterols in fat products. The use of microwave techniques for the continuous recording of water content in fat products, e.g., margarine, was reported by Zeman and coworkers, Prague.

On the occasion of the third Symposium of Food Technologists held in Zvikov, May 31-June 2, much attention was paid to the analysis of liposoluble vitamins, especially to gas liquid chromatography and thin layer chromatography methods for tocopherols, tocopherol oxidation products, carotenes and retinol.

India . . . . . K.S. Krishnan

Panel discussion on "Aflatoxin Methodology"

A panel discussion on "Aflatoxin Methodology" was organized on April 8, 1972, at the Regional Research Lab, Hyderabad, by the Zonal branch of OTAI. The meeting was

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convened by S. Raghavendar Rao and presided over by S.S. Rajan of ICAR. About 25 persons from various research and industrial organizations attended the meeting, the objects of which were to discuss the methods available for aflatoxin analysis and to arrive at an uniform procedure which could be followed in the country.

Sampling procedures appeared inadequate, since mouldy and toxin-containing peanut kernels were unequally distributed. Grinding the samples, especially of raw kernels, posed problems. A committee, comprising K.S. Holla (Tata Oil Mills), M.R. Kalyanpur (Acme Synthetic Chemicals) and N.G. Wagle (General Superintendence), was requested to examine and suggest suitable procedures for sampling and to inquire if suitable laboratory-model attrition mills are available in the country for uniform grinding of the samples.

Methods of extraction were discussed in detail; the wet chloroform procedure continued to find favor among most of the analysts estimating aflatoxins because of its simplicity. If explosion-proof blenders are available, rapid procedures like the Best Foods procedure can be readily adopted. It was agreed that a collaborative test should be organized to study and compare wet chloroform procedure, using hexane-acetone-water in a mechanical shaker and Best Foods method using a magnetic stirrer instead of a blender.

There was considerable discussion of the effect of silica gel and the UV lamp on the results. High quality silica gel for thin layer chromatography is now available from Acme Synthetic Chemicals, Bombay, Biochemicals Unit, CSIR and Vallabhai Patel Chest Institute, Delhi, and is satisfactory for separation of the aflatoxins.

A.B. Joshi (Biochemicals Unit, CSIR) reported that pure aflatoxin standards in solutions are now available. The use of these would help considerably in aflatoxin estimation.

Course on "Thin Layer Chromatography"

This course was organized on March 11, 1972 at the University Department of Chemical Technology, Bombay. It was inaugurated by J.G. Kane and consisted of both lectures and practicals. Twenty-nine candidates attended the course.

Lecture meetings

R. Aneja of Unilever Research spoke on "Glycero-Phospho Lipids–Commercial and Synthetic," on February 17, 1972, and on April 5 of the same year Carroll L. Hoffpauier presented a talk on "New Food for the Protein-Hungry World."

Italy . . . . . Giovanni Jacini

Biodegradability of synthetic detergents

In March 1971, a law was passed by the Italian Government, regulating the production of synthetic detergents. As of September 1971, detergents produced and sold in Italy were required to be at least 80% biodegradable. The law does not prescribe the standard method to be used; Italian authorities tend to prefer the static method approved by the Organization for Economic Cooperation and Development; in case of doubt, biodegradability can be controlled by the "dynamic method," applied in West Germany.

Fifth edition of Standard Methods for the Analysis of Mineral Oils

The fifth edition of Italian *Standard Methods for the Analysis of Mineral Oils*, edited by the Stazione Sperimentale per le Industrie degli Oli e dei Grassi (Milan) in collaboration with UNICHIM (Italian ISO Organization), has been published: The volume consists of five chapters and includes ca. 100 standard methods.

11th Congress of the Italian Oil Chemists' Society

The 11th Congress on Fats, organized by the Italian Oil Chemists' Society of Milan, took place in Perugia and Spoleto on May 25-26, 1972. The congress in Perugia was held at the Agriculture Faculty of the University and in Spoleto at the Ancajani's Palace.

The meeting articulated into three round tables concerning biochemical, chemical and technological problems in the field of edible fats. Authors and titles are listed below.

Edible Lipids, Hepatic Lipase, Corporeal Composition (Moderators: F. Fidanza and G. Porcellati, Perugia University): L.A. Carlson, University of Uppsala, "General Outline on the Influence of Dietary Fats upon Lipid Metabolism"; M.A. Crawford, London, "The Relationship of Dietary Fats to the Chemistry and Morphological Development of Muscle, Liver and Brain"; E. Aaes-Jorgensen, Copenhagen, "Tissue Lipids in EFA Deficiency"; J.C. Coniglio, Vanderbilt University, "The Influence of Diet and Other Factors on Lipid Composition and Metabolism of Testicular Tissue"; P. Pani, University of Turin, "Liver and Plasma Lipids of Rats on High or Free Choline Diet"; C. Galli, University of Milan, "The Effects of Dietary Fats on the Lipid Composition of the Central Nervous System and of Brain Subcellular Structures"; C.G.D. Brook, University of London, "Adipose Tissue and Serum Lipids in Childhood Obesity"; D. Seiler, University of Heidelberg, "Function of the Sarcoplasmic Reticulum of Skeletal Muscle in Relation to the Lipid Composition"; L.A. Carlson, University of Uppsala, "Blood and Tissue Lipids in Relation to Dietary Fats."

Fatty Materials as Foodstuffs, Their Chemical Evaluation (Moderators: L. Laporta and R. Monacelli): F. Fidanza and G. Porcellati, University of Perugia, "Introduction"; R. Paoletti, Univeristy of Milan, "Significance of Essential Fatty Acids and Their Correlation with Prostaglandines"; E. Fedeli, Stazione Sperimentale Oli e Grassi, Milan, "Minor Components, Their Significance in Nourishing and Their Determinations"; E. Tiscornia, University of Genova, "Further Investigations on the Specific Distribution of Fatty Acids in Triglycerides of Vegetable Oils"; A. Strocchi, University of Bologna, "Position and Geometrical Isomers of Unsaturated Fatty Acids"; P. Capella, University of Bologna, "Primary and Secondary Products from Oxidation of Fatty Materials"; C. Carola, Stazione Sperimentale Oli e Grassi, Milan, "Humans' lipidic wants. Proposals for a balanced oil"; U. Pallotta, University of Bologna, "Proposal for an Analytical Systematization of Nourishing Fats"; J. Boldingh, Unilever, Vlaardingen, "Medico-biological and physiological aspects of fats."

Present Trends in the Olive Oil Extraction Technology (Moderator: C. Cantarelli, University of Milan): J.M. Martinez Moreno, Instituto de la Grasa y sus Derivados, Seville, "Introductory Lecture"; M. Vitagliano, University of Bari, "Extraction by Centrifugation"; U. Armonioso, Alfa Laval SpA, Monza, "Genealogy of the Olive Oil Separation"; C. Peri, University of Milan, "Principles of Pressure Extraction"; A. Chelazzi, Florence, "Expediency of Olive Paste Pressure Plants in Hydraulic Presses: Methods to Increase Their Capacity and Upgrade the Oil Produced"; A. Diefenbach, Monza, "Oil Extraction from Olive Husks by Continuous Cycle"; G. Petruccioli, Instituto Sperimentale per l'Olivicoltura, Spoleto, "Percolation Extraction"; D. Setti, University of Milan, "Optimization of the Percolation Extraction Process of Olive Oil"; J.M. Martinez Suarez, Instituto de la Grasa y sus Derivados, Seville,

"*Recientes Estudios de la Almazara Experimental del Instituto de la Grasa y sus Derivados de Sevilla*"; G. Montedoro, University of Perugia, "Modernization as to Treatments with Enzyme Additives in Extracting Olive Oil by Mechanical Means."

Numerous short communications were also delivered. During the meeting Rolando Rigamonti, Dean of the Technical High School of Turin, was awarded the gold medal "Stefano Fachini" biennial prize. Previously the prize had been awarded to H.P. Kaufmann (Germany), Martinez Moreno (Spain), O.S. Privett (U.S.) and Paquot (France).

Japan . . . . . Teruzo Asahara

JOCS to celebrate 20th Anniversary

The Japan Oil Chemists' Society, founded in November of 1952, will celebrate its 20th anniversary on Monday, November 20th. Several events have been planned in honor of this anniversary year, one of which was the JOCS-AOCS 1972 Joint Meeting in Los Angeles. Other celebration activities include publication of comprehensive books for homemakers on detergents and edible oils, a special edition of the JOCS journal reviewing oil chemistry and the oil industry, and special lectures.

1970-71 Production of Soaps and Detergents in Japan (metric tons)

	1970	1971	Ratio, %
Soaps	151,040	143,933	95
Detergents	697,832	722,939	104
Total	848,872	866,872	102

Supply Plan of Fats and Oils in Fiscal Year of 1972 (thousand metric tons)

	Edible	Industrial	Export	Total
Import	887	341	31	1,259
Domestic production	227	69	45	341
Total	1,114	410	76	1,600

Yugoslavia . . . . B. Matijasevic

Symposium on food control

The Union of Societies for the Improvement of Nutrition organized on May 16-17, 1972, at Novi Sad, during the 39th International Agricultural Fair Symposium on food control and propositions for amending the existing Food Regulations. The 35 papers presented at this meeting treated the quality of different food products in the Yugoslav market in the light of Yugoslavian Regulations and Codex Alimentarius.

Propositions for amending the Food Regulations, in order to ensure quality and biological value of edible products, have been made in all of the papers and during the discussions. The greatest part of the discussion on edible oils and fats had the purpose of bringing Yugoslavian Regulations into accordance with Codex Alimentarius.

One of the papers treated the problem of control of pesticide residue in food products.

As the Symposium gathered a great number of participants—the representatives of producers, institutions for food control and scientific institutions—many different viewpoints were represented in the discussion on food products. Conclusions from this symposium will be useful in making improvements on the existing Food Regulations. All of the papers and conclusions from this meeting will be printed in the journal *Hrana i ishrana* (*Food and Nutrition*).

Margarine production

Margarine production in Yugoslavia began at the end of 1956 when the first margarine factory was built by the oil factory at Zagreb. Immediately after that the second one was built by the oil factory at Vrbas, and after that two new factories at Uroševac and Titov Veles. At the end of 1972, a new, modern factory began production. This margarine factory is the part of oil and hydrogenated fats factory at Zrenjanin. The equipment is from the English firm of A. Johnson. Continual line for soft margarines packing was purchased from the French firm Plasticmecanique S.A. (equipment of Formseal type). This factory will produce different kinds of margarine, especially the high quality margarines and various diet margarines, enriched by some vitamins and essential fatty acids. The quality of raw materials, additives and margarines is investigated in the modern bacteriological and chemical laboratory.

Today there are five margarine factories in Yugoslavia, which completely satisfies the market both in quantity and quality. Main raw materials for margarine production are vegetable oils, mainly sunflower, used both directly and after hydrogenation. Hydrogenated soybean oil and cottonseed oil as well as coconut and palm kernels oil are also used for margarine production. According to Yugoslav regulations, the vitaminization of margarine is prescribed for vitamin A (4000 IU/100 g) and vitamin D (300 IU/100 g). Only β-caroten is used for margarine coloring. Many kinds of table margarines reach the market side by side with margarines for bakery industry.

Margarine production in 1971 was ca. 19,000 tons. Good quality and assortment of this product influence the continuous increasing tendency toward margarine consumption.

Translation of Bailey's Industrial Oil and Fat Products

The translation of D. Swern's book *Bailey's Industrial Oil and Fat Products*, was recently published. This book was printed due to the Yugoslav-American program for publishing scientific works. It was edited by Nakladni Zavod, Znanje, Zagreb. As one of the best books in this field, it was welcomed with pleasure by the technologists of the oil industry as well as by the graduate students at the technology of oils and fats. Translation was done by Marijan Rac and Biserka Oštrić-Matijašević.

Jan Pokorny visits Yugoslavia

Jan Pokorny from the Department of Food and Biochemical Technology, Prague, visited Yugoslavia on the invitation of the Faculty of Technology, Novi Sad. Pokorny gave a lecture on "Mechanism of Autoxidation and Stabilization of Lipids" to the graduate students of the technology of fats and oils. Technologists from oil factories also attended the lecture. Most of the presented data were the results of the experimental research of Pokorny and coworkers, carried out in the lipid field in the course of the last 15 years.

During his stay, Pokorny visited the oil factory in Vrbas, one of the leading in Yugoslavia both in production capacity and modern equipment. This visit was the occasion for our technologists to discuss many professional problems with Pokorny.

The Faculty of Technology at Novi Sad considered Pokorny's visit very useful and wishes to continue such collaboration with the Faculty at Prague. ■