

World Conference on **SOYA** Processing and Utilization

CENTRO ACAPULCO • ACAPULCO, MEXICO
November 9-14, 1980

Soya conference reflects rising production, costs

The World Conference on Soya Processing and Utilization that opens Nov. 9 in Acapulco, Mexico, comes at a time when soya production and use are increasing rapidly in Latin America.

The conference is designed to transmit state-of-the-art knowledge and technology about the processing and use of soya, particularly for nations that could improve the nutritional quality and quantity of foods in their diet through a sustained growth in the use of soya. The meeting will provide a means to establish constructive and continuing dialogs between experts in soya products and processing and those professionals who can put such knowledge to practical use.

Soya production in Latin America has been paced by spectacular increases in Argentina and Brazil. Ten years ago those two nations were producing about 1,500,000 metric tons annually; they now produce nearly 20,000,000 tons annually. U.S. exports of soybeans, soy oil and soy meal to Latin America have risen from approximately 500,000

metric tons in 1970 to approximately 2,000,000 metric tons during 1980.

Through its advantages as a source of both calories (in the form of edible oil) and high-quality protein, soy offers probably the best potential means available in the near term for offsetting the increasing disparity between population growth and food supply in Latin America.

The President of Mexico, Jose Lopez Portillo, is scheduled to formally open the conference during the initial plenary session on Monday morning, November 10. Strong support for the conference also has been voiced by the governor of Guerrero, the state in which Acapulco is located. Gov. Ruben Figueroa Figueroa has advocated use of soya protein in human foods for many years. The Instituto Superior Agropecuario Autonomo del Estado de Guerrero (Guerrero Agricultural Institute), has encouraged soya

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Production of soya in Latin American nations, 1970-79, in thousands of metric tons

Nation	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Argentina	27	59	78	272	496	485	695	1,400	2,700	3,800
Brazil	1,509	2,077	3,666	5,012	7,876	9,839	11,227	12,200	10,200	10,200
Colombia	95	115	122	114	114	169	75	103	135	137
Mexico	240	250	375	510	420	625	280	470	330	600
Paraguay	52	75	97	122	181	220	284	377	275	430
Latin America totals	1,923	2,576	4,338	6,030	9,087	11,392	12,561	14,550	13,640	15,167

Source: USDA Statistical Bulletin No. 639, Indices of Agricultural Production for the Western Hemisphere 1970 through 1979

U.S. soy exports to Latin America Nineteen symposia scheduled for New Orleans

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Soybeans										
Brazil	1	5	5	6	0	0	0	0	0	0
Chile	13	11	0	0	0	0	0	92	172	0
Colombia	14	0	20	33	0	0	0	0	45	35
Cuba	5	5	5	20	20	20	20	20	20	20
Jamaica	13	17	0	0	0	16	35	48	65	80
Mexico	60	18	22	254	135	133	550	580	633	700
Peru	11	42	20	30	19	5	20	35	25	70
Uruguay	0	0	1	0	0	0	0	0	0	0
Venezuela	60	58	86	63	42	42	58	75	45	60
Totals	177	156	159	406	316	216	683	850	1,005	965
Soy Meal										
Chile	0	0	0	0	0	6	15	10	8	8
Colombia	0	0	0	0	0	0	13	0	9	10
Cuba	39	70	60	84	80	79	81	80	80	80
Ecuador	31	14	13	13	10	10	10	0	0	0
Jamaica	6	0	21	15	32	38	19	13	0	0
Mexico	106	81	51	34	24	10	190	56	105	160
Peru	0	0	4	1	0	0	0	0	0	40
Venezuela	12	23	5	89	42	80	205	240	315	375
Totals	194	188	154	236	188	223	533	399	517	673
Soy Oil										
Bolivia	3	1	0	1	0	5	13	8	5	10
Brazil	3	1	0	0	0	0	0	0	110	0
Chile	32	10	27	51	93	54	38	49	57	45
Colombia	4	0	1	7	7	32	52	53	87	70
Dominican Republic	10	4	2	10	17	13	9	18	30	30
Ecuador	13	13	13	18	9	21	23	40	28	35
Haiti	10	12	8	5	5	16	15	14	18	20
Jamaica	4	4	23	8	1	2	6	3	4	4
Mexico	3	0	10	40	77	4	15	34	5	0
Panama	16	12	10	21	11	9	19	11	14	15
Peru	6	28	56	65	51	59	60	83	20	35
Trinidad & Tobago	1	1	1	37	4	2	3	5	8	8
Uruguay	4	4	3	8	10	3	13	10	5	0
Venezuela	0	1	0	2	0	12	0	0	29	41
Totals	109	91	154	273	285	232	266	328	420	313

Source: Foreign Agricultural Service, USDA

production and will make a symbolic delivery of soybeans for human consumption to President Lopez Portillo during the opening ceremonies. The symbolic delivery will represent 100 metric tons of soybeans produced in Guerrero. Conference registrants will have an opportunity to visit Guerrero's soya fields. The agricultural institute is sponsoring optional field trips each afternoon to nearby soybean fields.

The plenary program features 54 speakers from throughout Latin America, North America and Japan. Plenary lectures will be in Spanish or English, and simultaneous translation will be available. An accompanying exposition will be open Sunday afternoon and Monday through Thursday afternoons after completion of each day's plenary

sessions. Approximately 60 more speakers will make brief presentations during the 17 round table discussion sessions scheduled for each afternoon. There will be three or four of these simultaneous sessions each afternoon.

Soya producers attending the conference will be offered the opportunity to attend additional discussion groups especially planned for growers. These sessions will feature specialists from around the world explaining the potential impact on producers of the topics being discussed at the conference. Of particular importance is the possible genetic changes in soya to meet the needs of soya users.

A three-member conference honorary committee con-

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sists of the Hon. Jorge Correguieta, Secretary of Agriculture and Livestock in Argentina, his excellency S. Francisco Merino-Rabago, Secretary of Agriculture and Hydraulic Resources in Mexico; and the Hon. Alex P. Mercure, assistant secretary of agriculture for rural development in the United States. In addition to President Lopez Portillo, honored guests expected to attend the opening ceremonies on Monday include James Starkey, USDA Deputy Undersecretary for Foreign Affairs; Guerrero Gov. Figueroa and Sr. Manuel Bernardo Aguirre, governor of the state of Chihuahua in Mexico.

Approximately 40 organizations are serving as sponsors or participating organizations in developing and promoting the meeting. The official sponsors are the American Soybean Association, the National Association of Manufacturers of Edible Fats and Oils in Mexico, the Government of the state of Guerrero, the American Oil Chemists' Society, the USDA Foreign Agricultural Service, the USDA Science and Education Administration and the U.S. Agency for International Development.

Participating organizations are: Agricultural Research Institute, USA; American Association of Cereal Chemists; Australian Institute of Food Science and Technology, Association of Official Analytical Chemists, USA; BEVEPRO, Belgium; CAADES, Sinaloa, Mexico; Central Institute of Nutrition and Food Research, TNO, The Netherlands; Centro de Investigaciones y Asistencia Tecnológica del Estado de Chihuahua, Mexico; Consejo Nacional de Ciencia y Tecnología, Mexico; Danish Meat Products Laboratory; European Vegetable Protein Federation; FEDIOL, Belgium; Food and Agricultural Organization of the United Nations; Food Protein Council, USA; Food Protein R&D Center, Texas A&M University, USA; Grain Marketing Office Oilseeds Division, Agriculture Canada; Institut des Corps Gras, France; Institute of Food Technologists, USA; Instituto Nacional de Investigaciones Agrícolas (INIA), Mexico; Instituto Nacional de la Nutrición (INN), Mexico; Instituto Superior Agropecuario Autonomo del Estado de Guerrero, Mexico; International Association of Seed Crushers, Great Britain; International Society for Fat Research; International Soy Program (INTSOY); Japan Vegetable Protein Food Association; National Soybean Processors Association, USA; Oil Technologists Association of India; Soybean Industry Association, Australia; Swedish Oilseed Growers Association; The Netherlands Society for Nutrition and Food Technology; Verband Deutscher Oelmuhlen; VERNOF, The Netherlands.

Round table discussions

Round table discussions each afternoon during the World Conference on Soya Processing and Utilization are designed to give registrants a chance to comment on what they have heard during the plenary sessions as well as to direct questions to the speakers.

The informal meetings will include presentation of brief papers on the plenary themes. There will be three to four concurrent discussion groups each afternoon.

Registrants may ask questions directly of speakers or use printed question forms that will be distributed during plenary sessions. Registrants may write their questions on these forms, indicating the name of the speaker to whom the question is directed. These forms will be collected at the rear of the main hall after each plenary session and distributed to the appropriate discussion groups.

There will be no verbatim transcript of the informal discussions, nor will the sessions be tape recorded. Simultaneous translation will not be available, but bilingual persons will be available to provide consecutive translation, if needed, during question and answer portions of each round table.

Contributed papers

Conference organizers have set aside time on Monday and Tuesday afternoons, simultaneous with the exposition, for presentation of a limited number of contributed papers. These presentations were volunteered by speakers whose talks were not able to be accommodated in the plenary or round table sessions. The schedule for these papers will be available in the registration area at the conference.

Social, spouses' programs

Conference organizers have provided ample opportunity for informal conversation among registrants and speakers during the soya meeting. There will be several conference-sponsored evening social events. The first will be an informal reception in the exposition area on Sunday, Nov. 9. On Monday evening, Nov. 10, there will be an outdoor reception at the Acapulco Center, after which registrants will have free time to tour the Center and its many attractions. On Friday, Nov. 14, there will be a gala social event for all conference registrants. An informal breakfast of coffee, juice and rolls will be available Monday morning in the Acapulco Center immediately before the opening ceremonies. Arrangements also are being made for two sponsored lunches during the week.

Those social events will be available to all technical program registrants and also to persons who register for the spouses' program. In addition, spouses' program registrants will have a glass-bottomed boat cruise on Acapulco Bay, local shopping excursions, and a behind-the-scenes tour of one of Acapulco's major hotels followed by a luncheon and style show at the hotel. Spouses' program registrants obviously will have more time for Acapulco's beaches than technical program registrants, whose programs will last from 8:30 a.m. until 6 p.m. daily.

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November 9-14, 1980

Program

SUNDAY, NOVEMBER 9, 1980

Registration

Opening of exhibits/reception in exhibit area

MONDAY, NOVEMBER 10, 1980

Opening Ceremonies

Session I—Production. Chairmen: R.W. Judd, National Soybean Crop Improvement Council, USA, and Celio Barriga, CIANO, Mexico

Expanding the Genetic Potential of the Soybean. L. Camacho, INTSOY, Peru

Improving the Field Production Environment. A. Lam-Sanchez, State University of Sao Paulo, Brazil

Improving the Protection of Soybean Seeds and Plants. K. Athow, Purdue University, USA

Improving the Quality of the Soybean. K. Smith, American Soybean Association, USA

Increasing the Supply of Soybeans. W. Thompson, INTSOY, USA

Session II—Processing. Chairmen: T.H. Applewhite, Kraft Inc., USA; D.R. Erickson, American Soybean Association, USA; Hector Gil, Galleterra Mexicana S.A., Mexico; and Frank Khym, consultant, USA

Mexican Soya Processing Industry. A.G. Gonzalez-Uriarte, President, NAMEFO, Mexico

The Economics and Trading Rules for Soybeans. J.H. Starkey, USDA Deputy Undersecretary for International Affairs, USA

The Handling, Transportation and Preparation of Soybeans. W.M. Barger, French Oil Mill Machinery Co., USA

Lunch break

Exhibits open

Optional field trip to Guerrero soya growing areas

Round Table Discussion Groups:

Production. Soybean Production Research in Mexico, E. Alvarez Luna, INIA, Mexico; Germ Plasma Availability, Edgar E. Hartwig, USDA Delta Branch Station, USA
Synthesis of a New Genotype of Soybean for Human Consumption in the Tropics, N.M.S. Banafunzi, Instituto Superior Agropecuario del Estado de Guerrero, Mexico



The Governor of the State of Guerrero, Ing. Rubén Figueroa Figueroa (center) talks during luncheon in Acapulco with Gil Harrison (second from left), American Soybean Association Latin America coordinator, and AOCs Executive Director James Lyon (between Harrison and Gov. Figueroa). Gov. Figueroa has had a personal interest in development of soybeans for human consumption as a means to increase protein in the diet of Guerrero residents. Others at table were participating in the luncheon this past July during which the conference announcement was made.

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Meetings

Processing. Storage of Soyabeans under a Controlled Atmosphere, Phillippe Van Dosselaere, De Smet, Mexico
Germination of Soyabeans and Its Modifying Effects on the Quality of Whole Fat Soya Flour, David Mendizabal, Industrial de Alimentos S.A., Mexico
Evaluation of Breakage Susceptibility of Soyabeans, V.K. Jindal, Asian Institute of Technology, Thailand
Soyabean Processing and Near Infrared (NIR) Measurement, Ronald D. Moen, Neotec Corp., USA
Art of Soyabean Meal and Hull Grinding, G.R. Thomas, Prater Industries, USA
Solvent Safety, Leigh Shoemaker, French Oil Mill Machinery Co., USA
Energy Consideration in Oil Mills and Refineries, V. de Oliveira Shurmann, CEVAL, Brazil
Low Cost Extrusion, Marcel Noyes, Buhler-Miag, USA
Training of Processing Personnel, panel of plenary speakers
Soya Protein—Nutrition. What Are Current Regulations of Soya Protein Costing the World in Higher Food Prices and Lost Nutrition? Sheldon Hauck, Food Protein Council, USA
A Legislator's Consideration in Development of Regulations on New Food Sources, Thomas Grumbly, USDA Food Safety and Quality Service, USA
Difficulties of Defining Nutritional Quality through Legislation, Marshall Myers, Uncle Ben's Foods, USA
Consideration of Regulations on Baby Foods containing Soya Protein in Venezuela, José Félix Chávez, Universidad Central de Venezuela
Achievements and Constraints in the Introduction of Textured Soya Foods in Brazil, Ottilio Guernelli, UNICAMP, Brazil

Evening — Reception at Acapulco Center

TUESDAY, NOVEMBER 11, 1980

Session II—Processing (continued)

The Extraction of Oil from Soyabeans. A. Garcia-Serratto, Los Molinos S.A., Mexico
Degumming, Refining and Bleaching of Soya Oil. L.H. Wiedermann, Swift & Co., USA
Theory of Hydrogenation and Winterization of Soya Oil. R.R. Allen, Anderson Clayton, USA
Practical Aspects of Hydrogenation and Winterization of Soya Oil. R. Hastert, Harshaw Chemical Co., USA
Deodorization and Finished Oil Handling. A. Gavin, EMI Corporation, USA
Coffee break
Formulation of Products from Soya Oil. E.G. Latondress, Davy McKee Corp., USA
Processing and Utilization of Byproducts from Soya Oil Processing. J. Woerfel, Gold Kist Inc., USA

Session III—Effects of Processing on Soya Oil—Analysis, Physical Characteristics and Nutrition. Chairmen: P. Cattaneo, emeritus, University of Buenos Aires; E.A. Emken, USDA Northern Regional Research Center, USA; and J.M. Hasman, Best Foods Division, CPC International, USA

Methods of Analysis of Processed Soya Oil. G. Frankl, section head for fats and oils research group

Analysis of Processed Soya Oil by Gas Chromatography. R.P. D'Alonzo, Procter & Gamble Co., USA
Techniques for Flavor and Odor Evaluation of Soya Oil. H.W. Jackson, Kraft Inc., USA
Codex Standards for Fats and Oils. R. Hlavacek, Thomas J. Lipton Co., USA

Lunch
Exhibits open
Optional field trip to Guerrero soya growing areas

Round Table Discussions:

Processing. Modern Aspects of Bleaching on Soyabean Oil, Ernst H. Goebel, Quimica Sumex S.A., Mexico
Effects of Catalyst Concentration on Selectivity in Soya Oil Hydrogenation, Octavio Manero R., United Catalysts, USA
Hydrogenation in Plant Practice, Ignacio Garibay, Aceitera LaGloria, Mexico
Physical Refining of Soya Oil, Guy Posschelle, De Smet, USA
Chilling and Crystallization of Shortening and Margarines, Bart Greenwell, Groen, USA
Margarine and Salad Dressing Processing, Santiago Tribaldos, Kraft, Venezuela
Processing and Industrial Chemicals from Soya Oil, Earle Fritz, Union Camp, USA
Wastewater Treatment in Soya Oil Mills and Refineries, Ogden A. Clemens, Dravo Corp., USA
Soya Protein—Nutrition. Coordination of Nutrition and Food Technology to Meet Nutritional Objectives in Latin America, Max Ruttman, Chile
Uses of Soya Proteins in Mixed Protein Systems to Meet Nutritional Needs, Dan Hopkins, Ralston Purina, USA
Requirements for Foods containing Soya Protein in the Food for Peace Program, George Bookwalter, USDA Northern Regional Research Center, USA
Soyabeans in Feeding of Children, Benjamin Torun, INCAP, Guatemala
Soya Protein in Feeding the Elderly, David A. Cook, Mead Johnson, USA
Use of Soya Proteins for the Vegetarian Market, Oliver H. Miller, Loma Linda Foods, USA
Progress and Future Needs for Research in Soya Protein Nutrition, Walter Wolf, USDA Northern Regional Research Center, USA
Analysis and Stability of Soya Oil. Metals in Soya Oil, F. Orthoefer and F.J. Flider, A.E. Staley Mfg. Co., USA
Measurement of Frying Oil Deterioration, C.W. Fritsch, General Mills, USA
Fatty Acid Isomer Determination by Gas Chromatography, H. Heckers, Justus Liebig University, Germany
Antioxidants for Soya Oil, Dan Buck, Eastman Chemical Inc., USA

WEDNESDAY, NOVEMBER 12, 1980

Session III—Effects of Processing on Soya Oil—Analysis, Physical Characteristics and Nutrition (continued)
History of the Development of Soya Oil for Edible Uses. H.J. Dutton, USDA Northern Regional Research Center,

Meetings

Hunter, Procter & Gamble, USA
Studies on Lipid Responses to Interesterified Soya Oil-
Butterfat Mixtures and Soy Protein in Hypercholesterol-
emic Animals and Human Subjects, Superavat Mukher-
jee, University Colleges Science and Technology, India
Soya Meal. Full-Fat Soya Meal for Poultry, Park Waldroup,
University of Arkansas, USA
Energy-Protein Relationships for Poultry, Manuel Cuca,
University of Chapingo, Mexico
Color, Trypsin Inhibitor and Urease Activity As It Affects
Growth of Broilers, J.L. McNaughton, USDA Poultry
Research Lab, USA

THURSDAY, NOVEMBER 13, 1980

Session IV—Soya Meal in Animal Feeds (continued)

Fat Level in Layer Feeds. B. Reid, University of Arizona,
USA
Energy Levels for Broilers. P. Waldroup, University of
Arkansas, USA
Soya Meal in Calf Milk Replacers. G. Barr, Land O'Lakes,
USA
Coffee break

Session V—Soya Protein for Human Foods: Preparation, Characteristics and Uses. Chairmen: N.M.S. Banafunzi, Instituto Superior Agropecuario Autonomo del Estado de Guerrero, Mexico; H. Bourges, Instituto Nacional de la Nutricion, Mexico; and J.G. Endres, Central Soya Co. Inc., USA

Processing Required to Make Edible Soya Flour. E.G. Milli-
gan, EMI Corporation, USA
Process and Product Characteristics for Soya Concentrates
and Isolates. J.A. Ohren, Grain Processing Corp., USA
Processing and Product Characteristics for Textured Soya
Flours, Concentrates, and Isolates. M.F. Campbell, A.E.
Staley Mfg. Co., USA
Economics of Soya Protein Products and Outlook. A.J.
Langsdorf, Archer Daniels Midland Co., USA
Soya Protein Products in Meat, Poultry and Seafoods. D.
Waggle, Ralston Purina Co., USA
Soya Protein Products in Cereal Grain Foods. W.J. Hoover,
American Institute of Baking, USA

Break

Soya Protein for Fermented Foods (Soy Sauce and Miso)
and Non-Fermented Foods (Tofu). D. Fukushima, Kik-
koman Foods Inc., USA
Soya Protein Products for Institutional Feeding Systems. L.
Pereira, Instituto de Tecnologia de Alimento (ITAL),
Brazil
Direct Consumption of the Soyabean. J.L. Camacho, Insti-
tuto de Tecnologia de la Nutricion, Mexico
Soya Products for Feeding Infants, Children and Adults
under Nutritional Stress. J.C. Dutra de Oliveria, Uni-
versidade de Sao Paulo, Brazil.

Sponsored lunch

Exhibits open

Optional field trip to Guerrero soya growing areas

Round Table Discussion Groups:

Soya Meal. Early Weaning on Good Pig Starters, Armando

Shimada, National Institute of Animal Husbandry and
Research, Mexico
New Concepts for Early Weaning of Pigs, Juan Jose
Mageda, Elanco, Mexico
A Refined Near Infrared (NIR) Method of Measuring
Protein, Moisture and Fiber in Soya Meal, Don Webster,
Neotec, USA
Soya Protein Products. Utilization of Soya Protein in the
Development of Highly Nutritious, Low-Cost Products
in Mexico, J.C. Morales, INN, Mexico
Soya Protein Ingredients Prepared by New Processes—
Aqueous Processing and Industrial Membrane Isolation,
J.T. Lawhon, Texas A&M University, USA
Improving Functional Properties of Soya Protein by Con-
trolled Enzymatic Analysis, J. Adler-Nisses, Novo
Laboratories, USA
CIATECH: A Summary of Its Work Using Soya to Produce
Nutritional Food at Low Cost, A.C. Griensen, Centro de
Investigaciones y Asistencia Tecnologica del Estado de
Chihuahua
Soya Protein—Nutrition. Effect of Soya Protein on Mineral
Availability, J. Erdman, University of Illinois, USA
Significance of Soya Phytin in Nutrition, Werner Jaffe,
National Institute of Nutrition, Venezuela
Significance of Soya Trypsin Inhibitor Activity in Nutri-
tion, J.J. Rackis, USDA Northern Regional Research
Center, USA
Lysinoalanine: Production, Significance and Control in
Preparation and Use of Soya and Other Food Proteins:
Barbara J. Struthers, Ralston Purina Co., USA
Flatulence and Its Control through Soya Processing, J.J.
Rackis, USDA Northern Regional Research Center,
USA
Dietary Fiber in Soya Products, John Erdman, University
of Illinois, USA
Soya Oil—Quality. Panel of plenary speakers

FRIDAY, NOVEMBER 14, 1980

Session VI—Soya Protein for Human Foods: Nutritional and Regulatory Aspects. Chairmen: R. Bressani, Insti- tute of Nutrition of Central America and Panama (INCAP), Guatemala, and E. Lusas, Food Protein R&D Center, Texas A&M University, USA

World Need for Protein. N. Scrimshaw, World Hunger Pro-
gramme of the United Nations University, USA
The Role of Soya in Food Systems. R. Bressani, INCAP,
Guatemala
Soya Protein in Human Nutrition. B. Torun, INCAP,
Guatemala
Factors Affecting the Nutritional Quality of Soya Proteins.
I. Liener, University of Minnesota, USA
Soya Protein and Atherosclerosis. K.K. Carroll, University
of Western Ontario, Canada
Nutritional Quality of Soya Protein As Affected by Process-
ing. F. del Valle, University of Chihuahua, Mexico
Coffee break
Considerations in the Development of Regulations for New
Protein Sources. J. Vanderveen, FDA Bureau of Foods,
USA

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Meetings

Approaches of Industrial Countries to Accommodate Uses of Soya Protein Ingredients. R. Cooper, Ralston Purina Co., USA

Restrictions on Using Soya Protein in Foods in Latin America and the World. T. de Buckle, JUNAC, Peru

Status of Development of Codex Alimentarius Standards for Vegetable Protein. N. Tape, Agriculture Canada, Canada

Utilization and Quality Standards of Vegetable Proteins for Foods in Japan. H. Kanda, Nisshin Oil Mills Ltd., Japan

What Is Delaying Increased Use of Soya in Foods? G. Harrison, American Soybean Association, Mexico

Lunch break

No exhibits

Round Table Discussion Groups

Soya Protein—Nutrition and Products. Organizing and Implementing National Nutrition Programs, F. Monckeborg, Universidad de Chile, Chile

Review of Earlier Soya Protein Fortified Foods to Relieve Malnutrition in Developing Countries, J.M. Aquilera, Texas A&M University, USA

Use of Whole Soyabeans and Soyabean Flour to Extend Common Beans and Other Foods, W.C. Scarbieri, UNICAMP, Brazil

Use of Whole Soyabeans and Soya Flour As Protein/Energy Supplement to Maize, Luiz G. Elias, INCAP, Guatemala

Soya Fortification of Tortilla and Pinole in Chihuahua, A.C. Griensen, Centra de Investigaciones y Asistencia Tecnologica del Estado de Chihuahua

Soya Milk Developments in Latin America, R.H. Moretti, Unicamp, Brazil

Soya Protein—Nutrition. Panel of plenary speakers

Soya Meal. Raising a Healthy Calf, George Barr, Land O'Lakes, USA

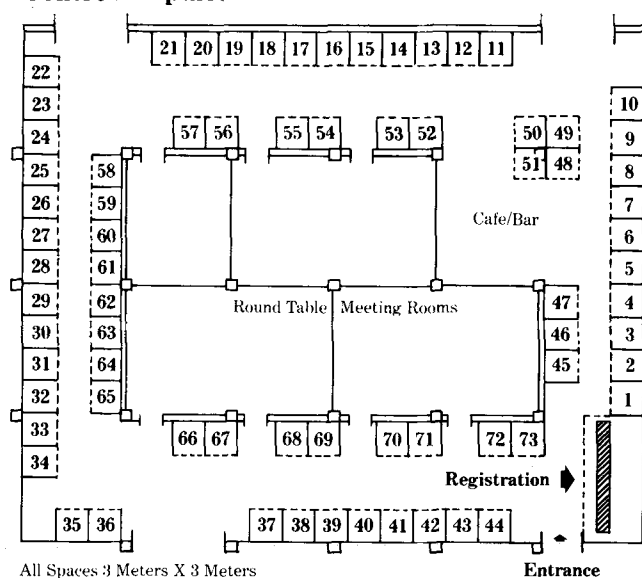
The Use of Multiblending As a Technique in Managing Ingredient Purchasing, Russ Bussman, Computone, USA

Optional field trip to Guerrero soya growing areas

Main conference social event

Exhibit plan

Cholula
Exposition Hall
Centro Acapulco



and light trash from soyabeans will be featured.

BERICO INDUSTRIES, PO Box 12285, Overland Park, KS 66212 (Booth 45). Berico soyabean/sunflower process driers for drying prior to processing feature fuel efficiency with cleaned recirculated air, tapered column design, Turn-Flo column mixing, automatic moisture controls, multiple fuel, direct-fired burners or steam, long-life design and serviceability will be featured.

CIATECH, Apartado Postal 1067, Chihuahua, Mexico (Booths 68 & 69). On display will be information about the 150 HP extruder and the 30 HP extruder for pilot plants, made in Chihuahua for CIATECH engineering. Also, the following products: corn flour enriched with full-fat soya flour (FFSF) for tortillas.

CROWN IRON WORKS COMPANY, 1229 Tyler Street NE, PO Box 1364, Minneapolis, MN 55440 (Booth 6). Crown is a leading supplier of engineering and equipment for solvent extraction. Crown Iron Works manufactures all equipment for the extraction area plus Meal Dryer-Coolers, DTDC's, Hull Toaster-Coolers and vertical cookers. Pictures, brochures and other literature will be available describing the equipment.

DAMMAN-CROES SA, Spanjestreet-51, 8800 Roulers, Belgium (Booth 14). Pictures and literature of a complete soya processing plant containing the world's biggest flakers and grinders will be featured.

DAWSON FOOD INGREDIENTS, 7901 Flying Cloud Dr., #230, Eden Prairie, MN 55344 (Booth 71). Dawson will exhibit spun protein fibrils for fabricating foods having true meat-like structure along with three meat analogs which demonstrate the flavor and eating qualities of beef, chicken and ham. Other protein materials will be shown such as soya isolate, textured flour, defatted flour, grits and flakes.

DEDERT CORPORATION, 20200 Ashland, Chicago

Exhibitors

ACEITE CASA, Avenue Ceylan, 793 Industrial Vallejo, Mexico 16 DF, Mexico (Booths 54 & 55).

ALPINE AMERICAN CORP., 5 Michigan Drive, Natick, MA 01760 (Booth 38).

AMOS, INC., PO Box 5613, Lafayette, IN 47903 (Booth 67). Spiral separators for removing corn and splits from soyabeans and a precleaning aspirator for removing hulls

Meetings

Heights, IL 60411 (Booth 39). The exhibit will feature the Vetter steam tube pilot dryer with vapor-tight enclosure. The unit is designed to permit more economical removal of hexane between extractor and traditional desolventizer. Units are available to handle up to 110 metric tons per hour of soya meal.

DESARROLLO INDUSTRIAL ING. SA, Casma 515, Mexico 14, DF, Mexico (Booth 13). Featured will be photos and catalogs on continuous processes such as bleaching, deodorizing, steam refining of soya oil, solvent extraction and semicontinuous hydrogenation winterization.

DE SMET U.S.A. CORP., 2625 Cumberland Parkway, Suite 200, Atlanta, GA 30339 (Booth 47). De Smet will display a reduced model of physical (steam) refinery of soya oil.

EASTMAN CHEMICAL PRODUCTS, 1133 Avenue of the Americas, New York, NY 10036 (Booth 4). Eastman will have information on Tenox and TBHQ antioxidants for soya oil.

EMI CORPORATION, 3166 Des Plaines Avenue, Des Plaines, IL 60018 (Booths 1 & 2). Slides and literature available describing EMI soyabean extraction and refining systems and award-winning edible protein processing systems. Plant pictures and process flow sheets for solvent extraction of oilseeds, fats and oils refining, fatty acid production processes and complete plants as offered by EMI will be presented. EMI catalogs will be available.

EXTRAKTIONSTECHNIK GMBH, Humboldtstrasse 56, D-2000 Hamburg 76, West Germany (Booth 53). Extraktionstechnik will show a survey of the activities comprising the supply of complete plants and/or unit equipment for the processing of all vegetable-oil-bearing materials as well as all vegetable oils and fats. The exhibit will feature the firm's latest improvements, including direct extraction of all seeds with high initial oil content, new design of the "Carrousel" extractor capacities in excess of 4,000 t/day and heat/waste material recovery systems.

FERRELL-ROSS, 6501 S. Interpace, Oklahoma City, OK 73126 (Booth 43). Literature, pictures and slides of Ferrell-Ross' line of cleaners, dryers, cracking and flaking mills for the oilseed industry will be on display.

FRENCH OIL MILL MACHINERY CO., 1035 W. Green St., Piqua, OH 45356 (Booth 70). Equipment showing the cumulative experience of 80 years in the field of manufacturing for the oilseed processing industry will be on display.

HARSHAW CHEMIE B.V., Postbus 19, De Meern, The Netherlands (Booths 72 & 73).

MASIERO INDUSTRIAL SA, PO Box 218 e 219, Jau, Sao Paulo, Brazil (Booth 44).

N. HUNT MOORE & ASSOC., INC., 3951 Senator St., Memphis, TN 38118 (Booth 3). Featured will be photographs of soyabean cracking and flaking equipment manufactured by Hermann Bauermeister GmbH of West Germany.

NEOTEC CORPORATION, 2431 Linden Lane, Silver Spring, MD 20910 (Booths 11 & 12). The 6350 research analyzer, feed quality analyzer, grain and oilseed analyzer and the Velasco fluorotoxin meter will be exhibited.

NOVO INDUSTRI A/S, Novo Alle, 2880 Bagsvaerd, Denmark (Booths 8, 9 & 10).

PRATER INDUSTRIES, 151 S. 55th Court, Chicago, IL 60650 (Booth 7). Prater will display a model hammermill, a fine grinder for soya flour and a model vibrating screen.

THE PRAXIS CORPORATION, 8327 Potranco Road, San Antonio, TX 78251 (Booth 50). Praxis will feature the Model SFC-900 Analyzer, which is a self-contained system for the determination of the solid fat content of edible fats. It provides for thermal conditioning of fat samples at seven temperatures and SFC at five temperatures. As many as 20 samples may be processed at a time.

QUIMICA SUMEX S.A., Av. Insurgentes Sur 1700, 40th Flr., Mexico City, Z.P. 20, Mexico (Booths 48 & 49).

ROSKAMP MFG., INC., 616 Grand Blvd., Cedar Falls, IA 50613 (Booth 52). Roskamp will display literature and pictures on Mark II 28 x 52 Flaking Mills, Roskamp-Langhurst 10 x 42 Cracking Mills.

SPROUT-WALDRON DIVISION, Koppers Company, Inc., Muncy, PA 17756 (Booth 15). Featured will be a cooker/extruder and polarized display of complete processing system including size reduction, size classification, mixing, agglomeration and bulk materials handling and storage equipment.

TECHNICON, Av. Colonia del Valle #615, Mexico 12, D.F., Mexico (Booth 42). On display will be the Infralyzer 400—Infrared Reflectance Analyzer for the analysis of protein, oil, moisture and fiber.

WENGER INTERNATIONAL, 2400 Pershing Rd., Suite 510, Kansas City, MO 64108 (Booth 5). Wenger will display samples of typical extruded soya products. Literature and information on extrusion-cooked, full-fat soya will be available. Technical specialists will be available for discussing extrusion-cooking whole ground soyabeans and its effects on solvent extraction.

WESTFALIA SEPARATOR MEXICANA, S.A., PO Box 227, Naucalpan, Edo. Mexico (Booth 46). Westfalia refining plant model (scale 1:25) for vegetable oils, including degumming, neutralization, water wash and vacuum drying steps will be displayed. Also, complete information about Westfalia centrifuges (automatic desludgers and standard models) and processes used in the vegetable oil and animal fats industry will be available.

WURSTER & SANGER, 222 W. Adams St., Chicago, IL 60606 (Booth 51). The exhibit booth will be equipped with catalogs, technical literature on W & S systems and samples of clients' products produced in Wurster & Sanger systems.

Development of a new soybean variety for human consumption

N.M.S. BANAFUNZI and A. MENA, Instituto Superior Agropecuario Autónomo del Estado de Guerrero, Iguala, Mexico

During the past five years, the state of Guerrero has conducted an extensive research project to increase the protein content of local diets through development of soybean varieties that can be locally grown and easily assimilated into local diets. Guerrero is the location of Acapulco, host city for the World Conference on Soya Processing and Utilization. This article explains Guerrero's project and the development of a new soy variety for human consumption. Conference registrants will have an opportunity to visit Guerrero's soya fields. This report was prepared by Dr. Nuren M.S. Banafunzi, professor of plant breeding and head of the Agricultural Research Division at the Instituto Superior Agropecuario Autónomo del Estado de Guerrero (ISAAEG) and A. Man, professor and investigator of oil crops at the ISAAEG.

A rapid population growth and decreased efficiency in food production are common features in many developing nations. Mexico is not an exception and among its states, Guerrero has perhaps one of the highest birth rates combined with various degrees of malnutrition ranging from kwashiorkor to marasmus. Protein malnutrition is common in most Guerrero communities. Per capita income is among the lowest ranking in Mexico, making animal protein prohibitively costly to low income groups.

The traditional methods, in developing nations, of feeding cereals and legumes to animals to produce animal protein is too expensive for Guerrero's poor. While animal proteins provide a complete profile of essential amino acids, soy protein has about the same nutritive value. Soy protein's advantages include its availability, its use for direct consumption by humans, and, above all, its low cost.

Thus far, the major limiting factors for production of soybeans in the tropics have been: (a) a lack of varieties adapted to low and high altitudes at low latitudes; (b) a lack of proven agronomic practices; and (c) a lack of varieties mild in beany flavor and therefore suitable for direct human consumption.

There obviously is an urgent need to improve production efficiency to permit improved diets, which should be accomplished without major changes in traditional dietary habits.

A proposal for such a program was made to the Governor of Guerrero, Ing. Rubén Figueroa Figueroa in 1975 by the head of the Unidad de Investigación y Divulgación del ISAAEG, Dr. Nuren M.S. Banafunzi. This proposal included (a) introduction of varieties for human consumption; (b) creation of new genotypes and their adaptation to low latitudes at both low and high altitudes; (c) development of new technology and cultural practices for production on commercial scales as well as in backyard gardens; (d) development of convenient, simple and economic processes, within reach of housewives, to make and use soybean food products; and (e) presentation of short

courses on production and use of soybeans as sprouts, green pods or dry beans.

Since its creation, this Research Center for Soybeans has been fully and exclusively supported by the Governor of the State of Guerrero.

While some soybean varieties were undergoing trial performances, other varieties specifically for human consumption were being synthesized. Simultaneously, easy and economic procedures to improve the palatability of soya as well as its incorporation into diets for youngsters and adults were investigated. Several short courses were conducted for government workers (public health, education, agricultural extension of DIF and Family Planning), for the general public in rural communities, and for housewives.

"Instantanea Agrícola" contains information on ways to use soya and its nutritional benefits. Soya sprouts are rich in thiamin and Vitamin C; soya green pods are good sources of carotene, a precursor of Vitamin A; dry beans used in soya yogurt are an excellent source of Vitamin B₁₂ and have high levels of methionine.

ISAAEG-BM 2

The ISAAEG-BM 2 is a new edible variety of soybean that constitutes an excellent source of plant protein and is useful for direct human consumption. The variety is disease-resistant with a wide range of adaptability (from 0° to 40° latitude, from sea level to 2,000 meters above sea level) and with high yields when recommended planting practices are followed. The ISAAEG-BM 2 variety was developed for multiple purposes (for use in green pod foods or as dried beans) and was designed for marginal growth areas as well as large commercial areas.

Origin and development

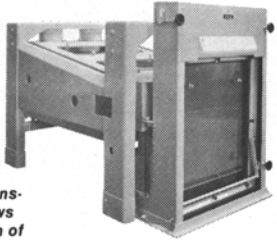
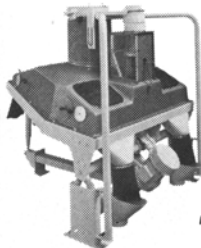
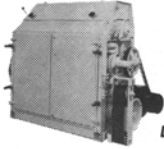


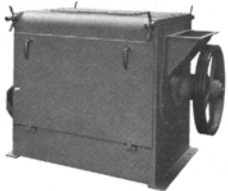
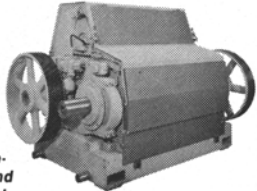

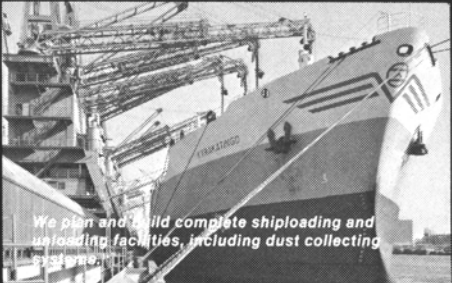
The ISAAEG-BM 2 is the result of a cross between a kahala selected line x Lee 68 made by Dr. Banafunzi and A. Mena. This work was done at the ISAAEG in Iguala in 1975. The Iguala cross selection in F₅ generation has been tested by researchers in Venezuela, Nicaragua, Bulgaria, and the state of Arkansas in the United States.

Description

The ISAAEG-BM 2 is a determinate erect variety of medium height with sparse foliage. It has purple flowers, tawny or brown at pubescence. Seeds are medium in size, yellow in color with black-colored hilum, and are round in shape. The ISAAEG-BM 2 at the green pod stage has a protein

Continued on page 744A.

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 <p>SOYBEAN PLANT with capacity of 2200 t/day is designed and installed by BUHLER-MIAG.</p>	 <p>DOZC FLAKING MILL is world's largest. Capacities up to 450 t/day.</p>	 <p>DMHX CENTRIFUGAL SIFTER separates meal up to 3800 cu ft/hr.</p>
 <p>DOQA FLAKING ROLLER MILL meets highest demands. Low sound level; constructed with integrated feeder.</p>	 <p>BUHLER CHAIN CONVEYORS for dust-free oilseed conveying, industry-proven over centuries.</p>	 <p>We plan and build complete shiploading and unloading facilities, including dust collecting systems.</p>

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content in the seed that compares favorably with other vegetable soybean varieties and has more protein than peas or lima beans.

Height, maturity, seed weight, yield and chemical composition of ISAAEG-BM 2 are as follows:

height	56 cm
maturity for processing	70 days
maturity for combining	100 days
seed weight of 100 seeds for combining	18 grams
yield per hectare for processing of pods	10 tons
yield per hectare for combining	2.5 tons
protein in mature seed	38%
oil in mature seed	17%

Disease resistance

In the area of its best adaption, such as Iguala Guerrero, Yautepec Morelos in Mexico, the ISAAEG-BM 2 is resistant to bacterial postule and to root knot nematodes. This variety also has shown resistance to bacterial postule in Arkansas (USA).

Cultural recommendations

For green pod harvest, the ISAAEG-BM 2 can be grown year-round. For dried bean combining, a planting date of June 15 to July 20 is best in Iguala Valley; a date between July 1 to July 20 is better for the coast of Guerrero during the rainy season. Row width should be 81 cm, planted in double rows and with 20 cm between rows. Recommended population densities for rainy season (long days in summer) is 350,000 plants/hectare and for irrigated fields (short days of winter), 600,000 plants/hectare.

Plant variety protection

A certificate of plant variety protection (No. 113-310380-Soy-1) for ISAAEG-BM 2 was issued April 14, 1980. It is illegal to produce and market ISAAEG-BM 2 seed except as certified seed. A supply of foundation seed of the ISAAEG-BM 2 soybean is maintained by ISAAEG Agricultural Experiment Station.

Mercure to speak at opening ceremonies



Speaking on behalf of the U.S. Department of Agriculture during the opening ceremonies for the World Conference on Soya Processing and Utilization will be Alex P. Mercure, Assistant Secretary of Agriculture for Rural Development.

Mercure was appointed to his post in April 1977 by the U.S. Senate. He previously had been vice-president for regional and community affairs at the University of New Mexico.

Mercure's office has responsibility for the Farmers Home Administration and the Rural Electrification Administration. Mercure serves as chairman of the federal Assistant Secretaries Working Group for Rural Development and on the President's Interagency Coordinating Council.

A native of New Mexico, Mercure has been active in numerous community service organizations and groups designed to spur rural development.

Mercure will deliver his comments in Spanish.

AOCS 1981

Nineteen tentative symposia topics have been announced for the 1981 AOCS meeting in New Orleans by technical program chairman Tom Jacks.

A major symposium on mycotoxins is being organized by Leo Goldblatt in honor of the late Walter A. Pons, a long-time researcher of mycotoxins at the Southern Regional Research Center.

The 72nd annual meeting of the AOCS will be held May 17-21, 1981, at the Fairmont Hotel in New Orleans. Robert Ory of the Southern Regional Research Center is general chairman.

Other tentative symposia topics and chairmen are:

- Fats and oils processing, J. Schnake
- Cottonseed processing, W. Barger
- Cotton dust in oil mills, R. Bethea
- Surfactants in textiles, M. Schick
- Analytical methodology in detergents, T. Matson
- Surface chemistry, T. Matson
- Energy in the detergent industry, T. Matson
- Control of hexane losses, L. Watkins
- Energy conservation, A. Gavin
- Energy conservation, H. Duff
- Vegetable protein chemistry and engineering, E. Lusas
- Industrial protein, E. McCabe
- Sterols, H. Kircher
- Flavor, A.J. St. Angelo and D. Min
- Lipid oxidation, W.A. Pryor
- Insect lipids, E. Lambreont
- Analytical methodology, R. Bower and W. Doeden
- Phytic acid, W. Evans

Researchers are invited to submit abstracts on these topics or any other fats and oils related topics to Tom Jacks by Dec. 1, 1980. The full tentative program for the 1981

Continued on page 752A.

Meetings

meeting will be published in the February 1981 *JAOCS*.

A golf tournament is tentatively planned for Saturday, May 16. This will be held the day before the meeting begins to avoid conflict with committee meetings or technical sessions. Other social events will include a mixer, two breakfasts and the traditional banquet.

A varied spouses' program tentatively includes visits to nearby plantations, a luncheon at one of New Orleans' best known restaurants, visits to local art museums, as well as the mixer and banquet.

Firms interested in participating in the accompanying exposition should contact Patrick Graham at AOCS Headquarters, 508 S. Sixth St., Champaign, IL 61820. Exhibit space will be more limited in New Orleans than was available for the 1980 meeting in New York; choice of exhibit spaces will be on a first-come, first-served basis.

Call for papers

The Technical Program Committee has issued a call for papers to be presented during the 72nd annual meeting of the American Oil Chemists' Society to be held May 17-21, 1981, at the Fairmont Hotel, New Orleans, Louisiana. Papers on every aspect of lipids, oils, fats and related areas are welcome. Please submit three copies of a 100-to-300-word abstract with title, speaker and co-authors clearly indicated. Presentations normally are 20 minutes in length. Please also indicate if you wish to make the presentation in the normal lecture manner or in a poster session. The abstracts are to be mailed to: Dr. Thomas Jacks, 1981 Technical Program Chairman, USDA Southern Regional Research Center, PO Box 19687, New Orleans, Louisiana 70179 USA.

Deadline: December 1, 1980

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