Problem Corner

Question May 28, 1955.

We have received an inquiry from Austria for pure, refined bear fat, and we wish to find a supplier. Could you recommend a source of bear fat in this country or in Canada?

AKRON, O.

Answer

We would suggest that you write to E. J. Verde and Company, 335 Produce Exchange, New York 4, N. Y.

This company is known as a broker for all kinds of fats and oils, and we believe that it will either provide your Austrian client with bear fat or will put you in touch with a source.

J. P. HARRIS

June 2, 1955.

Question

From time to time we receive inquiries from our associates in South America involving the use of a penetration test for determining the hardness of vegetable fats and other fats.

Up to the present time we have not seen any method in the Official A.O.C.S. Method Book involving the testing of hardness. Could you tell us therefore whether there is some such method used by the vegetable oil industry and the A.O.C.S.? We of course would be very much interested in receiving the details of such a method if one exists.

We do note that the A.S.T.M. Standards contain A.S.T.M. Designation D217-52T, a method for testing hardness of lubricating grease by cone penetration. Can this method be adapted for vegetable fats? Your advice in this regard would be very much appreciated.

FROM NEW YORK CITY

Answer

We find that the A.S.T.M. Penetrometer test has considerable utility in the fatty oil industry . . . as well as for testing the hardness of lubricating grease.

A further test known as the "Micro Penetration Test" is described by R. O. Feuge and A. E. Bailey, vol. 21, p. 28, Journal of the American Oil Chemists' Society. This method is described as a needle dropping into fat.

J. P. HARRIS

June 7, 1955.

Question

Please recommend books devoted especially to the making of metal soaps.

FROM HAVANA, CUBA

Answer

We are indebted to E. W. Colt and the library of Armour's Research Division for the following information.

"The following general references are excellent on the subject of metal soaps:

Elliot, S. B. 'The Alkaline Earth and Heavy-Metal Soaps,' Reinhold Publishing Corporation, New York, N. Y., 1946, American Chemical Society Monograph 103.

Kirk, R. E., and Othmer, D. F., editors. 'Encyclopedia of Chemical Technology,' Interscience Encyclopedia Inc., New York, N. Y., 1950, vol. 5, pp. 195–213, driers and metallic soaps.

Mattiello, J. J., editor. 'Protective and Decorative Coatings,' John Wiley and Sons Inc., New York, N. Y., II, 1942, pp. 613–641, metallic soaps.

"These references have extensive material on methods of manufacture, physical and chemical properties, and review applications in such fields as lubricating oils and greases, paints, inks, varnishes and lacquers, fungicides, waterproofing, rubber and plastics, and cosmetics and pharmaceuticals. They also have further bibliographies leading to specific magazine and patent references.

"Following is a list of manufacturers which are among the most important of those producing various types of metallic soaps. They publish brochures describing their products, which are available on request: American Cyanamid Company, Industrial Chemical Division, 30 Rockefeller Plaza, New York 20, N. Y.; Ferro Chemical Corporation, Box 349, Bedford, O.; Harshaw Chemical Company, 1945 East 97th street, Cleveland, O.; Mallinckrodt Chemical Works, Mallinckrodt street, St. Louis 7, Mo.; Metasap Chemical Company, Logan and Davis streets, Harrison, N. J.; Nuodex Products Company, 830 Magnolia avenue, Elizabeth F, N. J.; and Witco Chemical Company, 260 Madison avenue, New York 16, N. Y."

J. P. HARRIS

June 29, 1955

Question

In an inquiry sent to this office, information is requested on the stabilization and prevention of rancidity of fats in fish meal when dry-stored for eight or nine months, and also advice as to a suitable oil to be added to raise the fat content from 16% to 25%.

We have been informed by the writer that the fish scrap consists of the remaining portions of the fish after the fillet has been removed. It is dry-rendered at atmospheric pressure for four and one-half to five hours at 300°–350°F., and the resultant product is then put through a hammer mill, bagged, and held in dry storage, without refrigeration, over the winter. In the following spring this meal is sold for use in poultry feeds.

FROM OTTAWA, ONT., CANADA

Answer

We suggest that protection against rancidity of fats in fish meal can best be obtained by adding tallow or some other fatty oil containing an antioxidant which will raise the fat content as is desired, while giving this protection.

A recent survey by Karl Klomparens appeared in the March 1955 issue of Food Processing, and we believe it lists most of the antioxidants which are available.

Beyond this we are pleased to refer you to the following manufacturers of antioxidants, to whom you can write direct for suggestions as to how to proceed: William J. Stange Company, 342 North Western avenue, Chicago, Ill.; the Tennessee Eastman Company, Kingsport, Tenn.; and the Universal Oil Products Company, 30 Algonquin road, Des Plaines, Ill.

J. P. HARRIS

July 5, 1955

Question

In one of the colleges here we are equipping a laboratory with standard equipment for industrial research in the field of vegetable oils. We need a standard lab-size Anglo-American press, and/or a lab-size screw press. Could you furnish me with the names of the makers of the above-mentioned presses, approved as A.O.C.S. standard?

FROM CAIRO, EGYPT

Answer

There are no approved A.O.C.S. presses for this work.

The laboratory hydraulic press in our laboratory is a six-box press manufactured by the French Oil Mill Machinery Company, Piqua, O. The cake space is approximately half as long and half as wide as a regular commercial-size press. The thickness is the same as that of a commercial press. This press is equipped with a small cooker, cake-former, and hydraulic system. The French Oil Mill Machinery Company has complete specifications on this equipment. The Southern Regional Research Laboratory and the Buckeye Cotton Oil Company both use the same type of press in the research laboratories.

The French Oil Mill Machinery Company, of Piqua, O., also the V. D. Anderson Company, of Cleveland, O., manufacture screw presses or expellers of various sizes. The Southern Regional Laboratory has a one-quarter-size expeller. All our work on screw presses has been done on full-size machines.

A. CECIL WAMBLE
Texas Engineering Experiment Station
College Station, Tex.

July 8, 1955

Question

We are endeavoring to locate a publication dealing with prices, future markets, marketing conditions, and so on, for drying oils. We are also trying to find statistics showing the monthly fluctuation in raw materials, average values from about 1910 to 1953.

FROM NEW YORK CITY

Answer

We believe that the Oil, Paint and Drug Reporter, 30 Church street, New York, N. Y., can either supply the information you need or refer you to the proper source.

J. P. HARRIS

July 14, 1955

Question

We would like to regain the oil lost in the spent bleaching earth of our refinery. As bleaching earth we are using the Tonsil Optimum made by Messrs. Süd Chemie, Munich, Germany. This is a highly active earth. The oil handled is cottonseed oil, which has been thoroughly neutralized previous to bleaching. After mixing the earth and oil, we filter through a filter press of conventional design, and when the chambers of the filter press are full, we blow air of about 14 lbs./sq. in.

through the filter and recover some of the oil left in the earth cakes. In spite of this about 50% oil remains in these cakes. We are losing an equal weight of oil to the weight of bleaching earth used, and sometimes more.

We have learned that when these cakes are boiled in an open tank with water, caustic soda, and salt, and then diluted, some of the oil may be recovered. We have no idea how much water, salt, or caustic soda should be used. We have built an open tank with a flat bottom and good mixing device, and an open steam coil. We have tried various times but were not successful. We have either obtained an emulsion of some kind, or the earth sank to the bottom and there was clear water on top. We have never got a layer of oil floating on the surface so that it can be recovered.

We shall therefore be very grateful if you can advise us exactly how this operation should be carried out, giving the proportions of earth, caustic soda, salt, water, and the times of boiling the slurry, and so on.

We were also told that this oil could be recovered with a solvent extraction plant or an autoclave. But unfortunately we have not got the means of obtaining such elaborate equipment.

FROM ADANA, TURKEY

Answer

The best information I have been able to get on your problem is taken from U. S. Patent 1,828,035, issued to Carleton Ellis. It appears to give exact directions for carrying out the procedure you are interested in. Write to U. S. Patent Offices, Washington, D. C.

PROCTER THOMSON
Procter and Gamble Company
Cincinnati, Ohio

July 15, 1955

Question

We are contemplating making analyses for free fatty acid on our dry-rendered tallow and wonder if you can advise us as to the procedure and equipment required for making the analysis according to the A.O.C.S. Official Methods. We do not at present have any laboratory facilities and therefore would appreciate your being quite explicit.

FROM GREEN BAY, WIS.

Answer

We take pleasure in handing you herewith a copy of the A.O.C.S. Official Method for determining the free fatty acids in fatty oils, including animal fats.

We are also handing you herewith a list of 20 manufacturers of laboratory equipment, from whom you may purchase the equipment and reagents which are necessary to make these determinations. You will note that some of these concerns are marked as specializing in some field and others are located at some little distance from you. Consequently we are checking those whom it may be better for you to get in touch with. In writing to them, tell them what you need, and no doubt they will be glad to assist you in furnishing directions for setting up the necessary equipment.

J. P. HARRIS

Names More Committeemen

President W. A. Peterson announces the appointment to the Journal Advertising Committee of the following:

B. W. Beadle, Southwest Research Institute, San Antonio, Tex.; G. M. Kreutzer, Anderson, Clayton and Company, Houston, Tex.; R. E. Nisbet, A. E. Staley Manufacturing Company, Decatur, Ill.; F. H. Smith, Sharples Corporation, Philadelphia, Pa.; and R. L. Terrill, Spencer Kellogg and Sons Inc., Buffalo, N. Y.

❖

Max A. Minnig has been elected president of WITCO CHEMICAL COMPANY, New York, N. Y.

❖

Marvin Charton, Harris J. Shapiro, and Alex Vanderborg have joined the staff of research chemists at EVANS RESEARCH AND DEVELOPMENT CORPORATION, New York, N. Y.

❖

Robert S. Walleigh will serve as assistant director for administration at the National Bureau of Standards, Washington, D. C.