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China's soap, detergent production increasing

A study of China's soap industry conducted by Phillip Laney for the National Renderers Association (NRA) shows soap production in 1984 reached approximately 932,000 metric tons (MT), compared to 850,000 MT in 1983. One industry spokesman predicted soap production will increase to 980,000 MT in 1985, while detergent production is expected to total over 800,000 MT at 60 facilities.

Annual toilet soap production, Laney was told, currently represents 10% of the total soap produced and is expected to increase to a 30-40% share by 1990 and a 50-60% share by the year 2000. In addition, the Chinese predict soap powder will total 10% of all laundry soap production by 1990.

According to Chinese national standards, approximately 560 kg of fats and oils are used per ton for laundry bar soaps. For toilet soaps, the ratio is 860 kg of oil and 130 kg of lye per ton of soap, with the oil generally 80% tallow and 20% coconut oil.

Chinese soap industry spokesmen expressed a growing preference for soap powder because it requires less rinses than do snythetic detergents, Laney said. "In many rural areas water supplies were so tight that this was an important consideration," Laney wrote in his report to NRA, adding, "I was repeatedly told that local water supplies are very hard. These are the major reasons why they were so interested in LSDA (lime soap dispersing agent) technology."

Laney obtained information from representatives of the Daily Use Chemicals Bureau of the Ministry of Light Industries (MOLI) and segments of the soap industry during trips to China between November 1984 and February 1985. He reported the following procedures for importing tallow:

"MOLI is responsible for soap and detergent industry planning and procurement. During the year individual factories would submit specific requests for tallow imports in accord with the national plan and MOLI would consolidate these, asking the National Planning Commission to release allotments of foreign exchange against their allocation. When this was approved, CEROILS, the importing and handling organization, received the funds and made the purchase. For some time plants have been told to become more self-sufficient, to base production on real market demands and to become more efficient and profitable. However, the transition between the centrally planned system and a market driven system has been difficult because the raw materials allocated and finished goods produced have been priced at centrally determined prices, significantly lower than market prices, in effect subsidizing production cost."

Laney wrote, "In China the oil supply question is a fundamental concern of their industry. Because of China's economic situation, they must use the oil supply that they have including some low quality oils." Chinese soap industry officials indicated that soap production and oil imports rise about 10% annually.

Laney learned that the Tank Storage & Oils Refinery Plant subordinate to the Shanghai Branch Co. of CEROILS handles the refining and export shipment of Chinese oils such as tung, soy, peanut, cottonseed and rice bran. It also receives imported oils such as tallow, coconut (from the Philippines) and palm (from Malaysia). The facility, located along the Huang Pu River, now can accommodate ships up to 5,000 tons capacity at its pier. By the end of 1986, the pier will be enlarged to handle ships up to 10,000 tons. Currently, the larger ships must anchor in mid-stream and load and unload using barges. Three of the facility's eight 400-ton tank barges are used for tallow. "They have 21 big storage tanks of 3,000-4,000 tons capacity for storing various oils, of which about 6,000 tons capacity is devoted to tallow," Laney wrote.

"The imported oils are either shipped by their barge to factories in the Shanghai area or else transferred to 55-gallon drums for shipment to inland destinations, mostly by barge, and are transferred to railway cars somewhere else. They could fill and ship 800 tons of drums per day," he added.

Laney noted, "Although different lines and tanks are used for each type of oil, different shipments of the same type oil are commingled and, if different grades of tallow are purchased, those differences are soon lost track of. The drums ready for shipment were just labeled tallow, palm, coconut, etc. No track was kept of batches or of origins of any given oil."

According to MOLI sources, tallow is imported only for producing toilet soaps, with laundry soap production dependent on domestic oils and fats.

Tallow imports were approximately 130,000 MT for 1980, and about 100,000 MT in 1981. After an 80% import duty was established in 1982, tallow imports dropped to approximately 50,000 MT and have remained at about 40,000 MT a year since.

Officials at the Oil and Fat Chemical Factory in Shenyang told Laney they use imported beef and mutton tallow for producing oleic acid. While the company also has produced oleic acid from hydrogenated vegetable oils, customers seem to prefer oleic acid from natural tallow.

Concerning China's domestic rendering industry, Laney wrote, approximately 210,000,000 pigs are slaughtered a year. Two thirds, he said, belong to central government organizations while the remaining third are slaughtered on rural farms and consumed locally.

Laney noted, "There was nothing like our inedible rendering in China, no plans for it, and no need since Chinese people would always eat every edible part of the animal."

Chinese industry spokesmen reported that industrial lard was made from animals which did not meet health standards, supplemented by rendering excess body fat from meat animals. Laney also was told of several rendering plants to handle dead animals and to provide meat, bone products and glue.

Laney noted there is some domestic sheep tallow production as well.

Observing soap marketing techniques, Laney said the concept of free market sales appears to be a problem for the Chinese, who are accustomed to a central planning system.

A spokeswoman for the China National Light Industrials

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Products Import & Export Co. told Laney the main export markets for China's soap industry are Hong Kong, Singapore, Malaysia and Nigeria. The only Chinese soaps accepted in the U.S. and European markets, meanwhile, are sandalwood soaps. This, she said, is because U.S. and European buyers have found other Chinese fragrances unacceptable, saying they are irritating to the nose, too strong and too short-lasting. Another industry problem is that of packing, particularly the low quality of packing materials.

A Shanghai Foreign Trade Corp. official said there is good export demand for quality soap products from factories such as Shanghai, Tienjin and Sandong. "Shanghai name brands are well received and are exported all over the world, but constitute less than 10% of the total production," Laney wrote.

Meanwhile, a spokesman from the Shanghai General Merchandise Purchasing and Supply Station explained that detergent powders are in tight supply and short of market demand due to a shortage of raw materials. He noted that powdered soaps need to be more effective, faster in dissolving and lower in price before they can compete. Also, he noted, consumption in the Shanghai area is seasonal, with demand during the summer and autumn 50% greater than in the winter and spring.

A representative of the Shanghai Detergent Factory said the production ratio between detergent and soap has been 1:1.5 but is expected to reach 1:1 in the next several years. The company is interested in developing tallow-based fatty alcohols and fatty alcohol surfactants for detergent use since alkylbenzene production is not adequate to satisfy demand for detergents and 40% of the requirements are imported. He said customers prefer detergents because of superior detergency, lower price and better solubility, especially in cold water.

"The greatest problem of the detergent industry is the lack of raw materials," Laney wrote, noting plans to build another linear alkylbenzene (LAB) plant of at least 75,000 tons capacity.

Noting that expansion of detergent production is dependent on raw material supplies, Laney wrote, "Because of high demand in their industry, there was no seasonality felt in consumer demand, but it was common for plants to use up their raw materials before the end of the year and shut down."

Laney also observed, "Detergent formulas must change as fabrics change. Now fabrics are almost 40% synthetics so the ratio of LAB in the detergent must go down and nonionic surface active agents increase."

Laney found that consumers still prefer products producing lots of foam, even though low suds products suitable for use in washing machines are available.

A MOLI spokesman told Laney that laundry soap is classified as a daily necessity by the government. Toilet soap, however, is not considered as important as it can be replaced by laundry soap if necessary and some grades of toilet soap were considered almost like cosmetic or luxury items, Laney noted.

"Toilet soap of all grades is supposed to contain 80% fatty acid. However, as different fats are used, the fat quality varies. Otherwise, the grading is strictly based on manufacturing cost," Laney observed, adding, "Fragrance, colors and packing materials cause the most significant differences in production cost."

In Jiangsu Province, Laney found, "It was suggested that older people preferred bar laundry soap out of habit and fear that detergent would harm their clothes. On the other hand, younger people preferred powdered products for the convenience and because they were more modern. Soap consumption was equally divided between urban and rural areas even though more than 80% of the population lived in rural areas. Rural people's sanitary habits and attitudes were backward and this was the root of the low total soap consumption, even though their financial situation and the thorough distribution of soap made it easily within their range."

In Anhui, Laney noted, "People were very conservative and just wanted to continue their traditional ways of washing. For clothes they had used switches of honey locust tree which cost nothing, were convenient and washed the old type of homespun cloth effectively. They used sodium carbonate to wash dishes and cooking ware. They didn't seem to feel that rural areas were going to want to switch to powdered wash products in a hurry since they felt it would be a long time before running water was widespread." He added, "There was general agreement that the main restriction of toilet soap production was the limited raw material supply. It was estimated that locally produced tallow amounted to less than 1000 tons a year."

Noticing stockpiles of pine resin, Laney wrote, "They said this domestic material was cheap and they made a low grade of soapstock from it which they mixed in with the regular soapstock to lower their cost."

Industry spokesmen expressed interest in receiving technical information or assistance for improved powder spray techniques, oil refining techniques, high speed centrifugal separation, high pressure hydrolysis suitable for small and mid-scale operations, distillation, U.S. batch processes for toilet soap, methods for making floating toilet soap and marbleized soap, improved dispersing agents (both LSDA and non-LSDA), and methods of making liquid soap and shampoos. They also sought information on foreign standards and specifications for soaps and oils.

One soap plant also indicated interest in transparent soap processing as well as in technology and equipment for fats and oils hydrolysis.

The NRA study was conducted to determine China's supply of domestic fats and oils, the costs and conditions of such supplies, and the existing internal markets for laundry and bar soaps and washing powders.

Surfactant congress

World Surfactant Congress II, sponsored by CESIO, will be held May 24-27, 1988, in Paris.

CESIO, the European Committee of Organic Surfactants and Their Intermediates, sponsored the first such meeting held during May 1984 in Munich.

Organizer for the 1988 meeting will be ASPA, the Syndicat National des Fabricants d'Agents de Surface et de Produits Auxiliaires Industriels. Further information will be available from CESIO, Avenue Louis 250, Bte. 102, B-1050 Bruxelles, Belgium.

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115 at 4th Southwest Seminar


Himpler


Cox


Merrill


Keeley


Boan


Ansari

Approximately 115 persons participated in the AOCS Southwest Section's fourth annual product development seminar held during February in Buena Park, California.

Connie Merrill of Shell Development opened the seminar with a description of improvements in soil redeposition test methodology. She described a system of multiple cycles and controlled soil introduction that yielded consistent formulation ranking and replication, while minimizing lab time required.

Craig Keeley of PQ Corporation provided a technical update on zeolite and silicate in detergent formulations. He said zeolites' calcium control and surface absorption characteristics make them useful in phosphate formulations in addition to their obvious applications in phosphate-restricted areas.

Hillary Himpler of FMC spoke on the methodology and application of cleaners designed specifically for food processing equipment, stressing the importance of careful experimental design when studying the efficacy of such products.

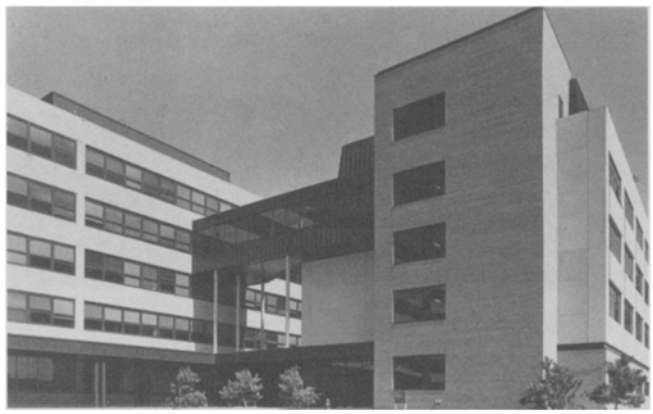
Rahman Ansari of Bush, Boake and Allen spoke on perfume encapsulation techniques. He discussed how various household products would benefit by using encapsulation to protect the fragrance.

Mike Cox of Vista Chemical described factors involved in selecting surfactants for hard-surface cleaners. He noted such cleaners are used in a variety of situations, including diverse soil, surface and other conditions. He described the surface chemistry involved in wetting, roll-up, liquification and suspension of various soil types, and how the surfactant selection affects these characteristics.

Bill Boan of Purex closed the program by describing the pitfalls inherent in production scale-up of a new product or process.

The annual seminars have drawn steadily increasing attendance. Whereas 50 to 70 persons attended when the series began in the early 1980s, the 115 registrants represents a new high. General chairman for the seminar was Marjorie Bessemer of Purex, with Anne Cowherd of FMC Corporation in charge of the program. Other committee members included Jack Hudson, Purex, publicity; Donna Westbrook, Lonza Inc., registration; Deborah Herman, Purex, arrangements, and Alan Heller, Witco, president of the Southwest Section.

New Lever complex dedicated



Lever Research's new Sciences Laboratory Building (right) is connected to the original Edgewater, N.J. laboratory building by enclosed walkways at first- and fourth-floor levels.

During May, Lever Brothers formally dedicated its new, $50 million research and development facilities in Edgewater, New Jersey.

The expansion increases research space by about two-thirds, Lever said, and the scientific staff has been expanded by a like amount to about 400 persons. In addition to the original five-story laboratory building, pilot plant and consumer test facilities, the 26-acre complex now includes six new buildings: a four-story sciences laboratory building for life sciences and physical sciences; safety assurance laboratory for testing new products; new pilot plant for household products; consumer test center; storage and materials handling building, and a utilities building.

Edgewater has been Lever's principal research facility in the U.S. since the early 1950s, when research activities carried out at various sites were combined there. Since then, Lever's sales have increased eight-fold, Lever chairman

AOCS member Howard Robinson, manager of analytical chemistry at Lever's new facility, displays new scanning electron microscope area, used in part to determine what substances are deposited on or removed from surfaces.

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Gordon Stevens told attendees at the dedication ceremonies. Among products developed at the Edgewater facility were Wisk liquid laundry detergent, Dove, Imperial margarine and Close-up, a gel toothpaste.

Speakers at the dedication included Sir Kenneth Durham, chairman of Unilever PLC; Frank Healey, president of Lever Research Inc., and New Jersey Gov. Thomas H. Kean.

IFSCC offices moved

The offices of the International Federation of Societies of Cosmetic Chemists and the Society of Cosmetic Chemists have been relocated to Delaport House, 57 Guildford St., Luton, Bedfordshire LU1 2NL, England. The telephone is 0582 (Luton) 26661; telex number is 826314. The offices previously were on Mill Street in Luton.

New research facility announced

The Upjohn Co. has announced plans for a $75 million corporate pharmaceutical research facility to be built in Kalamazoo, Michigan. The facility would include research laboratories for pathology, toxicology, drug metabolism and organic chemistry, plus space for support and office personnel. Design will be by the Austin Co. with construction scheduled to begin no sooner than the first quarter of 1986.