

Pilot-plant studies on soy milk in the United States.—Research on soy-milk processing plants to determine the feasibility of small-scale plants for processing whole soybeans by eliminating costly steps now in use has been sponsored by UNICEF in its search for low-cost soy milk. Dr. H. B. Hand, of the department of food science and technology, New York State Agricultural Experiment Station, reported his findings:

Dry soy milk of superior quality can be made directly from whole soybeans without including a water-extraction step. The yield is better, and the powder and labor costs are reduced. In the direct manufacture of dry milk from whole soybeans a homogenizer is added to the processing line but the evaporator and filter press are eliminated.

Storage life of soy flour.—The storability of foods in foreign countries is a major problem. Mr. Fred H. Haffner, of General Mills, according to the conference report, indicated that:

Storage life of soy flour is unusually long, far more stable than milk products, even at 140° F. if kept sealed. In polyethylene bags there has been no deterioration up to 5 years if kept dry and free from rodents and insects.

In India after 7 weeks' storage at 90° to 104° F. at a relative humidity well over 75 percent there was a slight softening and loss of crispness of samples stored in open bowls protected only by refrigerator covers at night, but no deterioration. This applied to both extracted and full-fat flours if the lipase had been destroyed. Until a few months ago no stable full-fat flour was being sold. Now we have stable products.

The special role of soybeans in the Food for Peace Program

The foregoing excerpts from the latest research findings on the place of soy protein in human foods, both as additives to cereals and as a beverage for child feeding, gives soybeans the outstanding position among the various new sources of protein. It is providential that this trend of development on the human nutrition fronts has been accompanied by a persistent rise in soybean production in the United States. The latest estimate places the 1961 crop at 700 million bushels, compared with less than 500 million bushels only 3 years ago, and 300 million bushels 10 years ago. This is now in dollar value our fourth largest cash crop and, if one may judge by the trends of the past 15 years in acreage and production, it is not inconceivable that we will be harvesting a billion-bushel soybean crop about 1966.

With this increase in production, we have experienced a comparable increase in demand, both domestic and foreign, and so far have not been faced with any serious carryover problems. There is, however, considerable doubt that total disappearance in domestic uses and exports will take up the entire new supply as they have been doing so far. Total disappearance in 1960-61 reached a record of 570 million bushels, and it could, in line with the recent trend, amount to 640 million bushels in 1961-62. This would leave a carryover of about 60 million bushels.

While a carryover of this magnitude presents no major surplus problem at present, since it would represent only about 1 month's requirements, it has an important bearing for the Food for Peace operations concerned with malnutrition.

It has already been noted that the protein deficit for 1962 in the diet-deficient countries has been estimated in terms of dry skim milk, wheat, and vegetable oil. The annual protein shortage, setting aside Communist Asia, is estimated to be about 800,000 metric tons, or about 1.7 billion pounds. Now, a bushel of soybeans yields about 40