NUTRITION

Corn to Feed Children

Under the President's Food for Freedom program, supplemental proteins, minerals and vitamins will be added to food sent to hungry children abroad

➤ A NEW GLORIFIED corn food from U.S. farms is ready to feed tens of millions of preschool children in the hungry areas of the world.

Created by American corn millers, it is a corn based nourishment for young children that will give them increased amounts of protein, minerals, and vitamins, along with the hearty carbohydrate calories of America's time honored maize, or corn cereal.

Under President Lyndon B. Johnson's new enlarged Food for Freedom program, now in Congress, the new food supplements will modify and adapt some of this nation's 208 million bushel annual corn production to fight famine and malnutrition throughout the world, particularly for children not yet in school.

The new formulations for corn were developed after three years of work inspired by Secretary of Agriculture, Orville L. Freeman, to bolster the new Food for Freedom program, which has given the Food for Peace program frequent assistance in feeding 41 million school children and 4.5 million preschool children in 91 countries.

One of the new foods was formulated by Dr. Gerald F. Combs, now assistant chief of the nutrition section of the office of international research of the National Institutes of Health, while consultant to the American Corn Millers' Federation.

Called CPP for corn, plant and protein, it is intended to provide one-quarter of a preschool child's energy needs and approximately half of his other nutritional requirements. It has in addition to cornmeal flour, Durum wheat flour, defatted toasted soy flour, nonfat dry milk and selected vitamins and minerals.

Another corn food, produced in cooperation with the Agency for International Development, is known as CSM for corn, soy and milk. It contains gelatinized precooked corn meal, defatted toasted soy flour, nonfat dry milk and minerals and vitamins. CSM will be made available in a flaked, powdered form as a base of nutritious drinks, soups and in other cooked forms.

Gelatinized corn meal is made by partially precooking corn meal in the presence of moisture. The combination of heat and water softens and bursts the cell walls of each particle of corn meal which contains hundreds of microscopic cells of starch, held together in a protein "matrix." The cooking converts the meal to a nutritious and easily digestible food.

Essentially the same thing happens when corn meal is cooked by the housewife. Unfortified by the minerals, vitamins and other nutrients now being added, gelatinized precooked corn products have been manufactured by corn millers for many years for use in candies, beverages, sauces, baked goods, sausage meats and other foods.

From the economic standpoint, according to the American Corn Millers' Federation, degermed corn meal is by far the lowest price food per calorie of any shipped by the United States in its overseas feeding programs.

The enriched "complete" foods, of course, will be more costly but the cost factor is being watched carefully by Federal officials responsible for the program.

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AGRICULTURE

'Sweet' Maples May Be Improved by Breeding

➤ MORE SUGAR and less water is the aim of scientists searching for a superior strain of "sweet" maple trees.

To counteract increasing production costs and declining returns in the maple sugar industry, researchers are trying to develop a breed of maples that will consistently yield large quantities of sap high in sugar content. Such a species could revolutionize the maple sugar industry.

At present, almost 35 gallons of water must be evaporated from sap to make one gallon of syrup. Trees that have been producing a lot of sap annually are being tagged, and their sap tested for sugar percentage.

To increase the proportion of sugar to water in the sap, scientists have been grafting cuttings from superior trees to seedlings. Shortly after the graft has taken, they test the new seedling for sugar by extracting a single drop of sap with a hypodermic needle.

The study is being conducted at the University of Vermont, Burlington, in cooperation with the U.S. Department of Agriculture.

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U. S. Department of Agriculture

A DROP OF SAP—Dr. Melvin Koelling, U.S. Forest Service, is extracting a single drop of sap from this hybrid maple seedling for testing for sugar content. Hybrids yielding sap with high sugar content are planted in sugar bushes, groves of maple trees, where they will one day be tapped for syrup production.