

Food Handling

Food has traditionally been appraised largely in terms of production and consumption. Less attention has been devoted to what happens in the intervening period. This third dimension of the food question involves primarily the control of deterioration, waste, and other losses. We need a concerted, international effort to collect reliable, adequate data on losses in plant and animal products and to gain an improved understanding of the ecological conditions governing the activities of postharvest pests and diseases.

Food handling can also be construed to include (1) making plant products acceptable to man's digestive processes; (2) removing deleterious components such as antitrypsin factors, anti-thiamins, and saponins; (3) supplementing certain commodities with constituents otherwise missing; and (4) eliminating nonedible portions. Nutritive changes in processing, nutritive improvements through fermentation, and amino acid supplementation are obvious broad areas of great interest.

Special attention should perhaps be directed to fermentation as a means of preservation having marked potential for use in developing countries, where modern techniques are unavailable or

overly expensive. The intricate interplay between a succession of micro-organisms during conversion and preservation of milk curd, bean curd, vegetables, wastes, etc., needs to be studied in the field, possibly by mobile biotechnical laboratories.

Another promising area would be the upgrading of sewage, which would permit its recycling back into food and feed.

EDUCATION AND MANPOWER

The manpower situation in the general area of ecological biology is by no means satisfactory. If the objectives of the International Biological Program are to be achieved, it will be necessary to involve not only experienced scientists but also graduate students who are directing their careers toward human ecology, and high school and college teachers. There will be a heavy demand for biologists trained in the use of computers and in mathematical methods applicable to systems analysis. If we are realistic, we must recognize that the International Biological Program will intensify present shortages. We should take steps to meet the situation promptly.