

TECHNICAL SECTION

JOURNAL OF
**Agricultural
and Food
Chemistry**

- Biochemical Engineering
- Fermentation
- Food Processing
- Nutrition
- Pesticides
- Plant Nutrients and Regulators

PLANT NUTRIENTS AND REGULATORS

Fertilizer Formulation. Experimental information developed by Turbett and MacArthur indicates that caking in high potash fertilizers can be controlled by regulating the ammonium nitrate equivalent. An increase in the ratio of ammonia to ammonium nitrate in ammoniating solutions improved the conditioning effect. Selection of proper raw materials can improve physical condition until the time when drying becomes a common practice in fertilizer manufacture.

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Sweet Potatoes. Preharvest foliar sprays of maleic hydrazide on sweet potatoes caused surface pitting of the harvested roots and seriously interfered with normal synthesis of provitamin A (carotene) and other carotenoid pigments during storage, according to the paper by Ezell and Wilcox. They found little effect on foliage and accumulation of carotenoid pigments in the roots during the time between treatment and harvest.

FOOD PROCESSING

Dehydrated Foods. Changes in the physical properties of starch play an important role during the tempering period in the production of potato granules, as evidenced by Potter's research. Increasing the tempering period and reducing the moisture content of the moist mix improve the degree of granulation and the quality of the granules. Lowering the temperature to room temperature during the tempering period also improves quality.

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Food Rancidity. Musco and Cruess found that most of the flavor deterioration of shelled walnuts is due to oxidation, although hydrolytic changes may also be involved. Light greatly increased deterioration, suggesting the desirability of lightproof packaging. Packing under vacuum in cans or jars or use of an effective antioxidant (butylated hydroxyanisole gave the best results) should be used for long shelf life.

NUTRITION

Nutritional Assay. An in vitro method for determining the damage done by the Maillard reaction to the nutritive value of food products such as dried milk during processing is offered by DeBaun and Connors. The method, which affords a satisfactory correlation with the more expensive method of determining animal growth response, involves measurement of the micro-biologically available lysine liberated from resuspended whey powders by digestion with crystalline trypsin.

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