

# TECHNICAL SECTION



- Nutrition
- Food Processing
- Fermentation
- Pesticides
- Plant Foods and Regulators

## **Amino Acid Content of Proteins Is Important for Nutritional Balance**

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• Proteins differ in their nutritive value, or quality. The best are those which contain amino acids in approximately the same proportions in which they are utilized in the body. Flodin surveys the protein problem in human nutrition in this light, showing the value of high quality protein in preventing deficiency diseases, maintaining health of mother and child during pregnancy, preventing tissue wastage in old age, and in many other aspects of health. He concludes from the evidence that efficiency of protein utilization may be improved by: (1) food combinations chosen for supplementary effects of their amino acid proportions; (2) even distribution of high quality protein among daily meals; (3) use of specific amino acid supplements to low quality proteins.

## **Crop Nourishment Is Approached through Both Roots and Leaves**

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• The addition of straw to soils increases acidity. Jordan, Lewis, and Baker report that when the soil was also treated with nitrates the acidity increased more than when it was treated with carbonates, even though total nitrogen levels were equivalent. • Urea spray, with a suitable wetting agent, applied to foliage, has proved very effective in supplying nitrogen to certain vegetable crops studied by Isaacs and Hester. Urea and ammonium nitrate in equal mixture could be used at higher concentrations than either material alone.

## **Beer, Pulque, and Tequila Quality Are Improved by Study**

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• Brewing is an art, but Schneider shows how the brewer's appreciation of the value of scientific aids and quality control methods are proving valuable in meeting the demand for a mellow, delicately flavored beer. As little as one part per million of trace constituents can be detected. • Proof that the strain of yeast determines the quality of tequila is offered by Sánchez-Marroquin and Hope, who reveal much about the nature of the fermentable constituents of Mexican agave, as well as the products which result from the fermentation. For example, only small amounts of fermentable sugar were found in the species from which tequila is made. Polysaccharides, particularly inulin, were found which hydrolyzed to fermentable sugars.

## **Mechanism, Formulation, and Residues Are All Part of Herbicides Technology**

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• A unified picture of mechanism of action of 2,4-D is not yet possible on the basis of existing knowledge, says Weintraub, but he summarizes what is known, discusses relationships between structure and activity, and offers a working hypothesis. • To be valuable, herbicides must be put into usable form. Kelly discusses methods of formulation, into oil emulsions, for example, and considers problems related to amines as solubilizers. • Critical factors related to herbicide residues are effect on soil microorganisms and soil properties and the removal of herbicides from soil. Aldrich considers these factors in the light of current knowledge.

## **Food Processors Have Problems with Minor Constituents and Molds**

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• Impurities interfere with sucrose crystallization, causing molasses formation and a loss. Goodban, Stark, and Owens have studied the worst offenders, amino acids, by paper chromatographic methods. They found as many as 18 in some samples of beet juice and observed variations in beets from various parts of the country. • Turk and Messer studied mutant and nonmutant forms of green lemon mold to see why the nonmutant, which produces ethylene, stimulates lemon respiration while the mutant doesn't. The stimulating effects can be reduced by use of a combination of bromination and adsorption by activated carbon.