TECHNICAL SECTION

JOURNAL OF Agricultural and Food Chemistry

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

NUTRITION

Protein Supplementation. Whole rye flour was found by Sure to be superior in the nutritive value of its proteins to whole wheat flour. Amino acid supplementation of whole wheat flour gave markedly increased growth responses over those obtained with amino acid–supplemented whole rye flour. Sure suggests that millions of acres of wastelands in this country could be turned to rye cultivation since rye is more productive than other cereal grains on infertile, sandy, or acid soils.

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Protein Supplementation. Shredded wheat supplemented with lysine, threonine, valine, and vitamin B_{12} was found to cause greater increases in body weight and protein efficiency than rations of soft wheat flour with the same supplementation. This study by Sure suggests that it may be practical for producers to incorporate amino acids in cereal breakfast foods when the costs of the amino acids drop sufficiently to make it economical.

FOOD PROCESSING

Flavor Origin. Oxidation and polymerization of unsaturated compounds, some terpene in nature, are thought by Spencer and Stanley to be responsible for flavor deterioration in stored tomato products. They isolated flavoring constituents of fresh and processed tomato products in an investigation of the preservation of flavor during processing.

pages 1113 to 1120

Fruit Storage Effects. Volatiles collected by activated carbon in a commercial apple storage warehouse were studied by Henze, Baker, and Quackenbush. They found 15 carbonyl compounds in addition to the acetaldehyde, acetone, and propionaldehyde identified previously. Their absorption spectra are presented.

FERMENTATION

Submerged Culture Fermentation. Certain strains of a corn smut fungus are fermented in submerged culture to produce an insoluble crystalline product that is of interest as a precursor in the synthesis of musks for the perfumer. Roxburgh, Spencer, and Sallans present a discussion of an investigation of optimum conditions for producing this product. They used 5-liter fermentors which were successfully scaled up to 200-gallon fermentors. Methods for recovering the product and useful degradation products are also described.

pages 1121 to 1124

PESTICIDES

Resistance to DDT. DDT-dehydrochlorinase, the name given by Sternburg, Kearns, and Moorefield to the enzyme thought to be responsible for DDT resistance in flies, was extracted from DDT-resistant flies. The authors found that it operates in a narrow pH range and appears to attack only those DDT analogs similar sterically to DDT. Rate of DDT dechlorination by the enzyme and alkali are so dissimilar that it is suggested that alkali dechlorination of compounds similar to DDT should not be used as a basis for speculation about their fate when applied to insects.

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