TECHNICAL SECTION

JOURNAL OF Agricultural and Food Chemistry

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

PESTICIDES

Weed Control. Hauser and Thompson report on greenhouse experiments with 3-amino-1,2,4-triazole on nutgrass and Johnson grass. Photosynthesis was disrupted in new growth, but respiration seemed to continue; after six weeks the plants were not killed and seemed to be recovering. Reserve food supplies in the tubers would probably be exhausted if the treatments were continued over a period of time under field conditions. The authors suggest that an investigation of the herbicide in combination with tillage operations should be made.

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Herbicide Determination. A method for separating the aromatic amine, which interferes with microdetermination of 3-(p-chlorophenyl)-1,1-dimethurea in plant tissues, is suggested by Bleidner. Using this method, chemists would not have to analyze a corresponding sample of untreated plant to correct for the interfering material.

FOOD PROCESSING

Orange Carotenoids. Curl and Bailey report on further work on the carotenoids as possible sources of off-flavor in stored orange juice products. Seventeen different xanthophylls were found in three of six fractions from a countercurrent distribution separation. All 17 were found to be either xanthophyll epoxides or corresponding furanoxides, which are, in general, ess stable than the simpler carotenoids, especially in acid medium.

pages 685 to 692

Fumigant Analysis. A quicker method for determining ethylene dibromide and ethylene chlorobromide in air during fumigation of fruits is proposed by Kennett. The method involves absorption of the gases in ethyl alcohol, decomposition with sodium hydroxide, and estimation of the liberated halogen by the Volhard thiocyanate method.

FOOD PROCESSING—PLANT NUTRIENTS AND REGULATORS

Cottonseed Contents Variation. Rainfall and mean maximum temperature are reported by Stansbury, Cucullu, and den Hertog to play important roles in elaboration of oil in the cottonseed during the maturation period. Variety also has a large role. The oil contents of moisture-free cottonseed kernels from the seed of commercial varieties of cotton grown at 13 locations during three years ranged from 26.8 to 43.4%.

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NUTRITION

Forage Crop Constituents. The hemicelluloses of forage plants, about which little chemical knowledge is known, supply a major portion of the caloric value of these plants to ruminant animals. Binger, Sullivan, and Jensen present data on the isolation and analysis of these compounds in orchard grass. Elucidation of their chemical composition, they comment, would help to determine their nutritive value and their role in plant physiology. Variation in composition among the fractions suggests that a mixture of polyunroide hemicelluloses may occur in orchard grass and the possibility that a succession of these compounds may be formed and incorporated into the plant during maturation.

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