TECHNICAL SECTION

JOURNAL OF Agricultural and Food Chemistry

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

PESTICIDES

Insecticide Analysis. In the course of studying the mode of action of the two systemic insecticides, demeton and schradan, March, Metcalf, and Fukuto developed paper chromatographic techniques for separating and identifying the components of the technical materials. Reversed phase paper chromatography was successful with demeton but completely ineffective for use with schradan.

Pesticide Formulations. An evaluation of the properties of heavy aromatic naphtha, a fraction naturally occurring in petroleum, from the standpoint of its possible use as a pesticides solvent, is presented by Nelson and Fiero. They report that the fraction, as used in normal concentrations, is not phytotoxic to pears, apples, tomatoes, celery, or citrus fruits and no more phytotoxic to corn than other commercial aromatic solvents. Animal toxicity studies indicate there is no health hazard in connection with its use as a pesticide solvent.

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Pre-Emergence Herbicides. Hance presents the results of studies on preparing low-volatile esters of 2,4,5-T for use as pre-emergence herbicides on sugar plantations in Hawaii. A 4-pound-per-acre application of the ester was found to give control of weeds for periods of from 8 to 10 weeks.

Rodenticides. Determination of warfarin in two types of finished baits, one a coated grain and the other a pelletized grain mixture, has not been possible with the usual physicochemical means involving a diethyl ether extraction. Coon, Richter, Hein, and Krieger propose a method for these baits which involves the substitution of a weak alkaline solution for the diethyl ether. This method allowed a 90 to 100% recovery of warfarin. Biological assays substantiated these findings.

FOOD PROCESSING

Milk Souring. The possibility that milk spoilage can be reduced economically and practically by feeding menadione, the vitamin K precursor, to lactating cows is suggested in the paper by Kelley and Dittmer. Cows fed menadione gave milk that remained sweet for 18 to 24 hours at 37° C., while those not treated gave milk which soured after 12 hours at the same temperature. At reduced temperatures, between 5° and 20° C., the effect of menadione was even more pronounced. Pasteurized milk from menadione-treated cows remained sweet 20% longer. No off-flavors were detected.

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NUTRITION

Feed Analysis. Methods used to determine free gossypol in cottonseed meals give erroneous results when used to determine the gossypol content of mixed feeds containing cottonseed meal. Storherr and Holley present a method utilizing the color reaction between phloroglucinol and gossypol. The extractive solvent used is 2-butanone-water-azeotrope containing aniline.

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