

# TECHNICAL SECTION

JOURNAL OF  
**Agricultural  
and Food  
Chemistry**

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

## **Plant Nutrients Come from Both Inorganic and Organic Sources**

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• In comparing phosphate furnace slag with limestone, MacIntire and Sterges found that the slag was decidedly more reactive. Calcium left the slag at a greater rate. After studying the slag as a possible source of hazardous fluorides, they concluded that use of the slag will not cause detrimental concentrations of these materials in nearby ground waters. • The nitrogen content of mulches was studied by Bollen, who indicates variations by types of materials. Young plants and leguminous materials were found higher in nitrogen than coniferous wood wastes, hay and straw, and also decompose readily to liberate nitrogen in available form. Wood, straw, and residues of similar carbon-nitrogen ratio decompose slowly and demand available nitrogen.

## **Pesticides Effectiveness Is Influenced by Formulation**

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• If a good pesticide is to be most effective, it must be applied properly. Formulation has proved to be extremely important. With this in mind, the Pesticides Subdivision of the Division of Agricultural and Food Chemistry of the American Chemical Society organized a symposium on formulation for the recent meeting in Los Angeles. With this issue, publication of those papers is begun. • Selz deals with the formulation of liquid concentrates and devotes his attention particularly to emulsifiable materials. The choices of solvent and of inert ingredients are considered with respect to their characteristics. Testing of emulsion characteristics of the liquid concentrates is discussed with emphasis on correlation of laboratory tests with field use. Compatibility with other materials which may be encountered also is important. • Ebeling and Pence studied the differences in pesticidal effect which are the result of formulation. The effectiveness of emulsions has been greater in topical applications than has that of suspensions, but usually the emulsions have been less effective as residues. Experiments with emulsions of acaricides showed the following order of effectiveness: topical-residue > residue > topical.

## **Emulsifiers or Pesticides May Have Effect on Foods**

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• The attention to effects of materials added to foods has increased very greatly during the past few years and not all opinions are supported by carefully controlled observations. • Wick and Joseph make a contribution to the factual basis for consideration of emulsifiers. Their objective was to learn if chronic ingestion of mixed anhydrides of sorbitol, used as a food additive, would cause deposition and accumulation of fatty acid esters of its polyhydric alcohol moiety in the fat stores of the body. Studies with rats indicated that the fatty esters of the mixed polyol are not deposited or accumulated. • Flavor of vegetables grown in soil treated with benzene hexachloride may be affected by that material, according to Dawson, Gilpin, Kirkpatrick, and Weigel of the USDA. Studies of several vegetables and the effects of the various isomers of the hexachloride indicated that the effect of flavor varies with formulation, dosage rate, and vegetable type.

## **Statistics as Well as Yeasts Are Important in Brewing**

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• Statistical quality control can lead to greater efficiency of brewhouse yields, declare Mayer, Morton, and Laufer. Studies of six breweries are presented to support their case. Brewhouse and cellar processes and particularly bottle shop operations are particularly suitable objectives, say the authors.