

# TECHNICAL SECTION

## JOURNAL OF Agricultural and Food Chemistry

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

### PESTICIDES

**Disease-Resistance Factors In Wheat.** Frequent suggestions that rust resistance in wheat is referable to specific proteins in the host plant were investigated by Barrett and McLaughlin. Using healthy and diseased wheat seedlings of a susceptible and a disease-resistant variety, they found by electrophoretic and chromatographic analysis that the proteins of the healthy and diseased susceptible plants showed differences, while the protein characteristics of the healthy and diseased resistant variety were the same. However, susceptibility may be associated with high amino nitrogen content and/or low carboxyl content or with a high ratio of amino nitrogen to carboxyl.

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**Fungicide Analysis.** Polley and Miller adapted two analytical methods they developed for use on organic mercurials to the determination of methyl mercuric dicyandiamide, a fungicide used for the seed treatment of cereal grains. The method is useful in the range of 1 to 100  $\gamma$  and is accurate to within  $\pm 3\%$ .

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### PESTICIDES—FOOD PROCESSING

**Fungicide Determination.** A chromatographic method for determining biphenyl, used to prevent mold during shipping and storage of citrus, is presented by Kirchner, Miller, and Rice. The method, to be used in determining the biphenyl content in fruit and processed products, allows for separation of the biphenyl from interfering citrus oils. Concentrations as low as 0.1 p.p.m. and as high as 600 p.p.m. have been determined.

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**Pesticide Residues in Foods.** DDT and its metabolite DDE were found in detectable but very small quantities in 25 meals from restaurants and institutions by Walker, Goette, and Batchelor. None of the meals contained enough DDT or DDE to be considered a toxicological health hazard on the basis of the estimated chronic oral toxicity of the compound. The authors suggest that foods intended for human consumption should be assayed in such a way as to determine the DDE content as well as the DDT content.

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### NUTRITION

**Biochemistry of Myoglobin.** Myoglobin, the oxygen-carrying pigment in muscle, was studied at the American Meat Institute Foundation in order to understand the chemical changes associated with the color of lean meat during irradiation with gamma rays or other treatments. Ginger and Schweigert present results of quantitative determinations of this compound in beef and pork muscle, in which they found that beef muscle contained almost five times as much myoglobin as light colored pork muscle and almost three times as much as dark colored pork muscle. The same authors, with Wilson, studied the chemical reactions of myoglobin derivatives with sodium nitrite and ascorbic acid.

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### FERMENTATION

**Evaluation of Malt.** A study of barley malt by Whitehouse and Adams may give grain alcohol producers a convenient method for predetermining the performance of malts. Determinations of  $\alpha$ -amylase units and limit dextrinase units vs. alcohol production were made on 82 samples of barley malts. The reciprocals of  $\alpha$ -amylase and limit dextrinase were both found to correlate well with actual production of alcohol. The authors suggest that either determination can serve as a reliable index of performance.

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