## TECHNICAL SECTION

Agricultural and Food Chemistry

October 1957 Volume 5, Number 10

## PLANT NUTRIENTS AND REGULATORS

| Plant Analyses, Flame Photometric Determination of Manganese, Iron, and<br>Copper in Plant Material   |                   |
|---|-------------------|
| A. D. Berneking and W. G. Schrenk   | 742               |
| PESTICIDES  |                   |
| Herbicide Leaching, Mobility of N-1-Naphthylphthalamic Acid (Alanap-1) in Soil  |                   |
| A. E. Smith, A. W. Feldman, and G. M. Stone   | 745               |
| Repellent Analysis, Separation and Differentiation of Mixtures of 2,3,4,5-<br>Bis(Δ <sup>2</sup> -butenylene)tetrahydrofurfural, Its Alcohol, and Its Acid, by Paper<br>Chromatography<br>L. C. Mitchell  | 748               |
| Repellent Residues, Determination of Small Quantities of 2,3,4,5-Bis  | , 40              |
| $(\Delta^2$ -butenylene)tetrahydrofurfural (Repellent R-11) in Milk<br>P. E. Toren, L. D. Goodhue, W. R. Kirkham, and D. E. Howell  | 749               |
| Insecticide Analysis, Polarographic Determination of O,O-Dimethyl 2,2,2-<br>trichloro-1-hydroxyethylphosphonate (Bayer L 13/59)   |                   |
| P. A. Giang and R. L. Caswell   | 753               |
| NUTRITION   |                   |
| Dietary Carbohydrates, A Review of the Effects of Different Carbohydrates<br>on Vitamin and Amino Acid Requirements   |                   |
| A. E. Harper and C. A. Elvehjem   | 754               |
|   |                   |
| NUTRITION AND FOOD PROCESSING   |                   |
| NUTRITION AND FOOD PROCESSING<br>Food Additives, Safety of Adipic Acid as Compared with Citric and<br>Tartaric Acid   |                   |
| Food Additives, Safety of Adipic Acid as Compared with Citric and   | 759               |
| Food Additives, Safety of Adipic Acid as Compared with Citric and<br>Tartaric Acid  | 759               |
| Food Additives, Safety of Adipic Acid as Compared with Citric and<br>Tartaric Acid<br>H. J. Horn, E. G. Holland, and L. W. Hazleton   | 759               |
| <ul> <li>Food Additives, Safety of Adipic Acid as Compared with Citric and<br/>Tartaric Acid<br/>H. J. Horn, E. G. Holland, and L. W. Hazleton</li> <li>FOOD PROCESSING</li> <li>Dehydration Temperature Effects, Effect of Temperature of Dehydration</li> </ul>   | 759<br>762        |
| <ul> <li>Food Additives, Safety of Adipic Acid as Compared with Citric and<br/>Tartaric Acid<br/>H. J. Horn, E. G. Holland, and L. W. Hazleton</li> <li>FOOD PROCESSING</li> <li>Dehydration Temperature Effects, Effect of Temperature of Dehydration<br/>on Proteins of Alfalfa</li> </ul>  |                   |
| <ul> <li>Food Additives, Safety of Adipic Acid as Compared with Citric and Tartaric Acid <ul> <li>H. J. Horn, E. G. Holland, and L. W. Hazleton</li> <li>FOOD PROCESSING</li> </ul> </li> <li>Dehydration Temperature Effects, Effect of Temperature of Dehydration on Proteins of Alfalfa <ul> <li>R. E. Beauchene and H. L. Mitchell</li> <li>Silage Evaluation, Polyunsaturated Fatty Acids in Legume-Grass Silage</li> <li>R. M. Ward and R. S. Allen</li> <li>Soloration, Enzymatic Browning, Reflectance Measurements, and Effect of Adenosine Triphosphate on Color Changes Induced in Plant Slices by Polyphenol Oxidase</li> </ul> </li> </ul>   | 762<br>765        |
| <ul> <li>Food Additives, Safety of Adipic Acid as Compared with Citric and Tartaric Acid</li> <li>H. J. Horn, E. G. Holland, and L. W. Hazleton</li> <li>FOOD PROCESSING</li> <li>Dehydration Temperature Effects, Effect of Temperature of Dehydration on Proteins of Alfalfa</li> <li>R. E. Beauchene and H. L. Mitchell</li> <li>Silage Evaluation, Polyunsaturated Fatty Acids in Legume-Grass Silage</li> <li>R. M. Ward and R. S. Allen</li> <li>Sod Discoloration, Enzymatic Browning, Reflectance Measurements, and Effect of Adenosine Triphosphate on Color Changes Induced in Plant Slices by Polyphenol Oxidase</li> <li>R. U. Makower and Sigmund Schwimmer</li> </ul>   | 762               |
| <ul> <li>Food Additives, Safety of Adipic Acid as Compared with Citric and Tartaric Acid <ul> <li>H. J. Horn, E. G. Holland, and L. W. Hazleton</li> <li>FOOD PROCESSING</li> </ul> </li> <li>Dehydration Temperature Effects, Effect of Temperature of Dehydration on Proteins of Alfalfa <ul> <li>R. E. Beauchene and H. L. Mitchell</li> <li>Silage Evaluation, Polyunsaturated Fatty Acids in Legume-Grass Silage</li> <li>R. M. Ward and R. S. Allen</li> <li>Soloration, Enzymatic Browning, Reflectance Measurements, and Effect of Adenosine Triphosphate on Color Changes Induced in Plant Slices by Polyphenol Oxidase</li> </ul> </li> </ul>   | 762<br>765        |
| <ul> <li>Food Additives, Safety of Adipic Acid as Compared with Citric and Tartaric Acid</li> <li>H. J. Horn, E. G. Holland, and L. W. Hazleton</li> <li>FOOD PROCESSING</li> <li>Dehydration Temperature Effects, Effect of Temperature of Dehydration on Proteins of Alfalfa</li> <li>R. E. Beauchene and H. L. Mitchell</li> <li>Silage Evaluation, Polyunsaturated Fatty Acids in Legume-Grass Silage</li> <li>R. M. Ward and R. S. Allen</li> <li>Sod Discoloration, Enzymatic Browning, Reflectance Measurements, and Effect of Adenosine Triphosphate on Color Changes Induced in Plant Slices by Polyphenol Oxidase</li> <li>R. U. Makower and Sigmund Schwimmer</li> <li>Super Sugar Impurities, Colorimetric Determination of Saponin as Found in Beet Sugars</li> </ul>  | 762<br>765<br>768 |
| <ul> <li>Food Additives, Safety of Adipic Acid as Compared with Citric and Tartaric Acid <ul> <li>H. J. Horn, E. G. Holland, and L. W. Hazleton</li> </ul> </li> <li>FOOD PROCESSING</li> </ul> <li>Dehydration Temperature Effects, Effect of Temperature of Dehydration on Proteins of Alfalfa <ul> <li>R. E. Beauchene and H. L. Mitchell</li> <li>Silage Evaluation, Polyunsaturated Fatty Acids in Legume-Grass Silage</li> <li>R. M. Ward and R. S. Allen</li> <li>Solo Discoloration, Enzymatic Browning, Reflectance Measurements, and Effect of Adenosine Triphosphate on Color Changes Induced in Plant Slices by Polyphenol Oxidase <ul> <li>R. U. Makower and Sigmund Schwimmer</li> <li>Beet Sugar Impurities, Colorimetric Determination of Saponin as Found in Beet Sugars</li> <li>H. M. Bauserman and P. C. Hanzas</li> </ul> </li> </ul></li> | 762<br>765<br>768 |

| within a Single Plant |    |           |    |    |         |     |    |    |      |  |   |  |  |  |  |  |  |  |  |  |     |
|-----------------------|----|-----------|----|----|---------|-----|----|----|------|--|---|--|--|--|--|--|--|--|--|--|-----|
| R.                    | Н. | Reitsema, | F. | J. | Cramer, | and | W. | Ε. | Fass |  | • |  |  |  |  |  |  |  |  |  | 779 |

No. 12 Advances in Chemistry Series

edited by the staff of Industrial & Engineering Chemistry

## Use of Sugars and other Carbohydrates in the Food Industry

17 papers—142 pages devoted to a better understanding of the ways in which our largest single dietary constituent—the carbohydrates contributes to the physical and chemical nature, as well as the nutritional quality and acceptability, of our foods.

The Role of Sugar in the Food Industry Starches in the Food Industry Liquid Sugar in the Food Industry Starch Hydrolyzates in the Food Industry **Pectic Substances in the Food Industries Carbohydrates in Confections** Sugar in Confectionery Sugar and Other Carbohydrates in **Carbonated Beverages** Sugars in the Canning of Fruits and Vegetables Sugars in the Baking Industry Sugar and Other Carbohydrates in Meat Processing Sugar in Frozen Foods Effects of Carbohydrates and Other Factors on Color Loss in Strawberry Products **Role of Carbohydrates in Infant Feeding Role of Sweeteners in Food Flavor** Sugars in Human Nutrition **Sugars in Standardized Foods** Paper bound...\$3.50 per copy Order from:

Special Issue Sales Dept. American Chemical Society 1155 16th St., N.W. Washington 6, D. C.