CONTENTS

VOLUME 55, NUMBER 1, JANUARY-FEBRUARY 1978

CONTENTS

PAGE

New Copyright Law .............................................................. iii
Memorial to Welker Bechtel ...................................................... v
Comparative Rheological Properties and Bread Qualities of Wheat
Flour Diluted With Tropical Tuber and Breadfruit Flours.
O. Olatunji and I. A. Akinrele ................................................ 1
Saltine Cracker Flavor. 1. Changes in Organic Acids and Soluble Nitrogen
Constituents of Cracker Sponge and Dough. H. A. Faridi
and J. A. Johnson .................................................................. 7
Disulfide and Sulfhydryl Groups in Glycinin. M. Draper and N. Catissmpoolas 16
Scanning Electron Microscopy of Cooked Spaghetti. J. E. Dexter,
B. L. Dronzek, and R. R. Matsuo .............................................. 23
Defatted and Reconstituted Wheat Flours. III. Effects of Flour Moisture Content
and Aqueous Binary Azeotropes on Functional
(Breadmaking) Properties. O. K. Chung, Y. Pomeranz, K. F.
Finney, and M. D. Shogren .................................................. 31
The Effect of Gluten Protein Fractions on Pasta Dough Rheology and
The Effect of Heat Treatment on Aggregation and Gelation of Peanut/Milk
Protein Blends. R. H. Schmidt .................................................. 58
K. Lorenz, M. Yetter, and R. M. Saunders .................................. 66
Enzyme Activities in Commercially Milled Rice. K. Lorenz and R. M. Saunders 77
Effects of Mixing and Surfactants on Microscopic Structure of Wheat Glutenin.
C. C. Tu and Cho C. Tsen ...................................................... 87
A Parallel Plate Rheometer for Measuring the Viscoelastic Properties of Wheat
Flour Doughs. G. E. Hiberd and N. S. Parker ......................... 102
Note on the Relation Between Bread Crust and Crumb Color Scores and Color
Reflectance Values. Mary Evenson and B. L. D’Appolonia .................. 110
Communication to the Editor: Detoxification of Aflatoxin-Contaminated Corn by
Roasting. H. F. Conway, R. A. Anderson, and E. B. Bagley ........... 115
Communication to the Editor: Tannin Content of Sorghum Grain by uv
Spectrophotometry. R. N. Sharp, C. Q. Sharp, and A. A. Kattan .......... 118
Instructions to Authors ....................................................... 119

VOLUME 55, NUMBER 2, MARCH-APRIL 1978

CONTENTS

PAGE

Glucosamine Analysis of Fungus-Infected Wheat as a Method to Determine the
Effect of Antifungal Compounds in Grain Preservation. B. Nandi ........ 121
An Investigation of the α-Amylase From Self-Liquefying Barley Starch.
B. W. DeHaas, D. W. Chapman, and K. J. Goering ...................... 127
Molecular Species of Triglyceride in Rice Bran. T. Miyazawa, H. Tazawa,
and Y. Fujino ...................................................................... 138
Durum Wheat α-Amylases: Isolation and Purification. J. R. Warchalewski and R. Tkachuk ................................................................. 146
Phase Equilibria and Structures in the Aqueous System of Wheat Lipids. T. Carlson, K. Larsson, and Y. Miezis ........................................... 168
Chemistry and Ultrastructure of a Major Aleurone Protein of Rapeseed Meal. T. A. Gill and M. A. Tung .................................................. 180
A Sensitive Automated Method for the Determination of α-Amylase in Wheat Flour. B. Marchyllo and J. E. Kruger ....................................... 188
A Method for Measuring Strength and Extensibility of Bread Crumb. L. K. Dahle and E. P. Montgomery ..................................................... 197
Implications of Moisture Loss in Grains Incurred During Sample Preparation. P. C. Williams and J. T. Sigurdson ......................................... 214
Protein α-Amylase Inhibitors From Wheat Flour. W. Pace, R. Parlamenti, A. Ur Rab, V. Silano, and L. Vitozzi ............................................. 244
Note on Water-Binding Effect of Two Dough Conditioners. H. Daoust, M.-A. Chabot, and R. Wasik ..................................................... 255
Note on a Method for Testing Gluten Strength. R. R. Matsuo .......................................................... 259

VOLUME 55, NUMBER 3, MAY-JUNE 1978

CONTENTS

Testing Wheat for Protein and Moisture With the Automated Digital Analyzer. P. C. Williams, S. G. Stevenson, and G. N. Irvine ....................... 263
Fractionation of Barley and Malted Barley Flours by Air Classification. J. R. Vose and C. G. Youngs .......................................................... 280
Selenium in Wheats and Commercial Wheat Flours. K. Lorenz .......................................................... 287
Vegetable Protein: Lipid Interactions. V. B. Kamat, G. E. Graham, and M. A. F. Davis .......................................................... 295
Modified Amylograph Test for Determining Diastatic Activity in Flour Supplemented With Fungal α-Amylase. P. M. Ranum, K. Kulp, and F. R. Agasie .......................................................... 321
Microbiological Study of Exported Soybeans. C. W. Hesseltine, R. F. Rogers, and R. J. Bothast .......................................................... 332
Distribution of Soluble Carbohydrates in Barley Grain at Late Stage of Maturity and Relation to Viscosity. B. Gohl, M. Nilsson, and S. Thomke .......................................................... 341
Mixograph Studies. II. Effect of Activated Double-Bond Compounds on Dough-Mixing Properties. L. F. Schroeder and R. C. Hoseney .......................................................... 348
Changes in Aminopeptidases of Wheat Kernels During Growth and Maturation. J. E. Kruger and K. R. Preston .................................................. 360
Microscopic Evaluation of Bread Fortified With Concentrated Plant Proteins. S. E. Fleming and F. W. Sosulski .................................................. 373
Functional Properties of a New Soy Protein Isolate. M. Shemer, H. L. Creinin, R. E. McDonald, and W. E. Irwin .................................................. 383
Breadmaking Studied by Light and Transmission Electron Microscopy.  
D. B. Bechtel, Y. Pomeranz, and A. de Francisco ........................................ 392

Baking Studies With Cassava and Yam Flour. I. Biochemical Composition  
of Cassava and Yam Flour. C. F. Ciacco and B. L. D’Appolonia ..................... 402

Note on Vitamins and Minerals of Wild Rice. E. W. Swain, H. L. Wang,  
and C. W. Hesseline .......................................................... 412

Note on Measuring Thickness of Wheat Bran by Scanning Electron  
Microscopy. D. R. Lineback, W. E. Cashman, R. C. Hoseney,  
and A. B. Ward ................................................................. 415

Erratum .................................................................................. 420

VOLUME 55, NUMBER 4, JULY-AUGUST 1978

CONTENTS

Mycotoxins in Foodstuffs. XI. Fate of Aflatoxin B1 During  
Preparation and Baking of Whole-Meal Wheat Bread. J. Reiss ..................... 421

Baking Studies With Cassava and Yam. II. Rheological and  
Baking Studies of Tuber-Wheat Flour Blends. C. F. Ciacco and  
B. L. D’Appolonia .............................................................. 423

Standardized Mixing and Fermentation Procedure for Experimental  
Baking Test. A. A. El-Dash ...................................................... 436

Effects of Certain Sugars and Sugar Alcohols on the Swelling of  
Cornstarch Granules. H. L. Savage and E. M. Osman ......................... 447

Zearalenone: Distribution in Wet-Milling Fractions From  
Contaminated Corn. G. A. Bennett, E. E. Vandegraff,  
O. L. Shotwell, S. A. Watson, and B. J. Bocan ................................. 455

Lactic and Volatile (C2–C5) Organic Acids of San Francisco  
Sourdough French Bread. A. M. Galal, J. A. Johnson, and  
E. Varriano-Marston ........................................................... 461

Nature of the Residual Protein Associated With Starch Fractions  
From Air-Classified Field Peas. R. D. Reichert and C. G. Youngs .......... 469

High-Pressure Liquid Chromatographic Method for Evaluating Free  
Lysine-Fortified Wheat-Flour Products. J. J. Warthesen and  
P. L. Kramer ........................................................................ 481

Corn Flour: Reduction of Particle Size. S. M. Badi, R. C. Hoseney,  
and W. D. Eustace ................................................................ 489

Corn Flour: Use in Cookies. S. M. Badi and R. C. Hoseney .............. 495

Isolation and Characterization of the Physicochemical Properties  
of the Starch of Jackfruit Seeds (Artocarpus heterophyllus).  
F. O. Bobbio, A. A. El-Dash, P. A. Bobbio, and L. R. Rodrigues .......... 505

Nutritional Aspects of Fermented Foods From Chickpea, Horsebean,  
and Soybean. C. Kao and R. J. Robinson .................................. 512

Aflatoxin in Corn: A Note on Ineffectiveness of Several Fumigants as  
Inactivating Agents. O. L. Brekke and A. C. Stringfellow .................. 518

Note on Construction of Efficient and Safe Crucible Trays and  
Tongs for Muffle Furnaces. R. Rousser and K. F. Finney ..................... 521

Note on Performance of Low-Cholesterol Egg Substitutes in Layer Cakes.  
M. E. Zabik and P. Lang ................................................................ 524

Note on the Presence of Debranching Enzymes in Immature Wheat Kernels.  
J. E. Kruger and B. Marchylo ............................................ 529

Note on Modification of the Kunitz Soybean Trypsin Inhibitor During  
Seed Germination. R. C. Freed and D. S. Ryan ............................ 534

Communication to the Editor: Free Surface Energy in the Elasticity  
of Wheat Flour Dough. T. Carlson and L. Bohlin ............................. 539
COMMUNICATIONS

Communication to the Editor: Composition of a By-Product of Wild Rice Processing. L. L. Navickis and R. A. Anderson .................................................. 544

Errata .................................................. 546

CONTENTS

VOLUME 55, NUMBER 5, SEPTEMBER-OCTOBER 1978

CONTENTS

SYMPOSIUM

Cereal Lipids: What They Are and What They Do

Introduction. Okkyung Kim Chung .................................................. 547
Wheat Lipid Composition. W. R. Morrison ......................................... 548
Rice Lipids. Y. Fujino .......................................................................... 559
Corn Lipids. E. J. Weber ...................................................................... 572
Sorghum and Pearl Millet Lipids. L. W. Rooney ................................... 584
Oat Lipids. V. L. Youngs ..................................................................... 591
Wheat Flour Lipids in Breadmaking. O. K. Chung, Y. Pomeranz, and K. F. Finney ................................................................. 598

Effect of Addition of Full Fat Sweet Lupine Flour on Rheological Properties of Dough and Baking Quality of Bread. J. E. Campos and A. A. El-Dash .................................................. 619
Determination of Egg Content of Noodles—An Evaluation of Results Obtained by Different Procedures. G. H. Burtini, P. Damiani, and P. Avellini ................................................................. 628
Factors Affecting Farinograph and Baking Absorption. I. Quality Characteristics of Flour Streams. J. Holas and K. H. Tipples .................................................. 637
Factors Affecting Farinograph and Baking Absorption. II. Relative Influence of Flour Components. K. H. Tipples, J. O. Meredith, and J. Holas .................................................. 652
Isolation and Characterization of Starch From Mature Soybeans. L. A. Wilson, V. A. Birmingham, D. P. Moon, and H. E. Snyder .................................................. 661
Bacillus Isolates From Refrigerated Doughs, Wheat Flour, and Wheat. R. F. Rogers .................................................. 671
Interaction and Bioavailability of Iron, Zinc, and Magnesium. G. S. Ranhotra, R. J. Loewe, and L. V. Puyat .................................................. 675
Rheological Dough Properties as Affected by Organic Acids and Salt. A. M. Galal, E. Varriano-Marston, and J. A. Johnson .................................................. 683
Effect of Free Flour Lipids on Cake-Baking Potential. R. D. Spies and A. W. Kirleis .................................................. 699
Origin of High Methionine Content in Sugary-I Corn Endosperm. J. W. Paulis, J. S. Wall, and J. Sanderson .................................................. 705
High-Fiber Cookies Containing Brewers' Spent Grain. N. Prentice, L. T. Kissell, R. C. Lindsay, and W. T. Yamazaki .................................................. 712
Biochemical and Nutritional Significance of Wheat Albumin Inhibitors of α-Amylase. V. Silano .................................................. 722
Rapid Method to Determine Quality of Wheat With the Mixograph. B. L. Bruinsma, P. D. Anderson, and G. L. Rubenthaler .................................................. 732
Effect of Bran and High-Protein Concentrate From Oats on Dough Properties and Bread Quality. B. L. D'Appolonia and V. L. Youngs .................................................. 736
### CONTENTS

**VOLUME 55, NUMBER 6, NOVEMBER–DECEMBER 1978**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>α-Amylase I From Malted Barley—Physical Properties and Action Pattern on Amylose. A. W. MacGregor</td>
<td>754</td>
</tr>
<tr>
<td>Nutritive Value of Buffalo Gourd Seed Protein. M. Tu, W. D. Eustace, and C. W. Deyoe</td>
<td>766</td>
</tr>
<tr>
<td>Measurement of Grain Dustiness. C. R. Martin and F. S. Lai</td>
<td>779</td>
</tr>
<tr>
<td>Note on Separation and Partial Purification of Wheat Proteases by Affinity Chromatography. K. R. Preston</td>
<td>793</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregelatinized Cara (Water Yam) Flour: Effect on Dough and Bread Quality. A. A. El-Dash, A. Tosello, and G. Roa</td>
<td>799</td>
</tr>
<tr>
<td>Electrophoretic and Immunochemical Properties of the 12S Rapeseed Protein. T. A. Gill and M. A. Tung</td>
<td>809</td>
</tr>
<tr>
<td>Purification, Modification, and Properties of Air-Classified Pea Starch. F. W. Comer and M. K. Fry</td>
<td>818</td>
</tr>
<tr>
<td>Long, Medium, and Short Grain Rices—Enzyme Activities and Chemical and Physical Properties. K. Lorenz, R. Y. Fong, A. P. Mossman, and R. M. Saunders</td>
<td>830</td>
</tr>
<tr>
<td>Effect of Semolina Extraction Rate on Semolina Characteristics and Spaghetti Quality. J. E. Dexter and R. R. Matsuo</td>
<td>841</td>
</tr>
<tr>
<td>Cookie Baking Properties of Defatted Peanut, Soybean, and Field Pea Flours. K. H. McWatters</td>
<td>853</td>
</tr>
<tr>
<td>Physicochemical Properties of Wheat Gel Proteins: Effects of Isolation Conditions. M. F. Jeanjean and P. Feillet</td>
<td>864</td>
</tr>
<tr>
<td>Relationship of Exoproteolytic and Endoproteolytic Activity to Storage Protein Hydrolysis in Germinating Durum and Hard Red Spring Wheat. K. R. Preston, J. E. Dexter, and J. E. Kruger</td>
<td>877</td>
</tr>
<tr>
<td>Microflora of Wheat and Wheat Flour From Six Areas of the United States. R. F. Rogers and C. W. Hesseltime</td>
<td>889</td>
</tr>
<tr>
<td>Use of Untreated and Roasted Navy Beans in Bread Baking. B. L. D’Appolonia</td>
<td>898</td>
</tr>
<tr>
<td>A Dimethyl Sulfoxide Preparative Treatment for Sectioning Cereal Grains. G. H. Kellner, L. S. Bates, and K. A. Mujeeb</td>
<td>908</td>
</tr>
<tr>
<td>Comparison of Legume and Wheat Flour Carbohydrates. I. Sugar Analysis. O. Naivikul and B. L. D’Appolonia</td>
<td>913</td>
</tr>
<tr>
<td>Color of Cottonseed Flour and Isolates as Affected by Mixed Solvent Extraction. R. S. Kadan, G. M. Ziegler, Jr., and J. J. Spadaro</td>
<td>919</td>
</tr>
<tr>
<td>Identification of Albumin 0.19 in Grain Proteins of Cereals. A. V. Konarev</td>
<td>927</td>
</tr>
<tr>
<td>Interaction of Some Dyes With Cereal β-Glucans. P. J. Wood and R. G. Fulcher</td>
<td>952</td>
</tr>
<tr>
<td>Determination of Coumestrol in Soybeans by High-Performance Liquid and Thin-Layer Chromatography. G. L. Lookhart, B. L. Jones, and K. F. Finney</td>
<td>967</td>
</tr>
</tbody>
</table>
Near Infrared Diffuse Reflectance Standards. R. Tkachuk and D. P. Law .......................................................... 981


Influence of Whole Meal Granularity on Analysis of HRS Wheat for Protein and Moisture by Near Infrared Reflectance Spectroscopy (NRS). P. C. Williams and B. N. Thompson .................. 1014

Extraction of High-Viscosity Gums From Oats. P. J. Wood, I. R. Siddiqui, and D. Paton .............................................. 1038


Note on Behavior of 1-Amino-1-Deoxy-2-Ketose Derivatives During Cooking When Added to Starch-Based Foodstuffs. G. Barbiroli, A. M. Garutti, and P. Mazzaracchio .................. 1056

Studies of Glutenin. XI. Note on Glutenin Solubilization With Surfactants in Water. K. Kobrehel and W. Bushuk .................................................. 1060

Communication to the Editor: Apparatus for Rapid Inspection of Corn for Aflatoxin Contamination. R. Barabolak, C. R. Colburn, D. E. Just, F. A. Kurtz, and E. A. Schleichert .................. 1065

Erratum concerning: Interaction and Bioavailability of Iron, Zinc, and Magnesium, by G. S. Ranhotra, R. J. Loewe, and L. V. Puyat (Cereal Chem. 55:675-682) .................................................. 1067

Author Index, Vol. 55 ................................................................ 1068

Subject Index, Vol. 55 ................................................................ 1073

Contents Index, Vol. 55 ............................................................ 1081