

Inside

- cover** Acknowledgment of Reviewers
- iii** Instructions to Authors
- 1** Effect of Fertilization on Yield and Quality of Irrigated Yecora Rojo Wheat Grown in Saudi Arabia. *A. Al-Mashhadi, M. Naeem, and I. Bashour*
- 3** A Fractionation and Reconstitution Method for Saltine Cracker Flours. *D. E. Rogers and R. C. Hosenev*
- 6** Effects of Fermentation in Saltine Cracker Production. *D. E. Rogers and R. C. Hosenev*
- 11** Fractionation and Evaluation of Triticale Pentosans: Comparison with Wheat and Rye. *H. S. Saini and R. J. Henry*
- 15** Air-Aspirated Wheat Cleaning in Grading and in Separation by Functional Properties. *A. Bettge, G. L. Rubenthaler, and Y. Pomeranz*
- 19** Lipidemic Responses in Rats Fed Biscuits Made with Fish Oil. *G. S. Ranhotra and J. A. Gelroth*
- 22** Structure of Amylomaize Amylose. *C. Takeda, Y. Takeda, and S. Hizukuri*
- 26** The Role of Low Molecular Weight Glutenin Proteins in the Determination of Cooking Quality of Pasta Products: An Overview. *P. Feillet, O. Ait-Mouh, K. Kobrehel, and J.-C. Autran*
- 30** Diffusion of Gaseous Sulfur Dioxide into Corn Grain. *S. R. Eckhoff and M. R. Okos*
- 33** Physical Analysis of Isolated Gluten Model Systems Heated in an Experimental Conventional-Microwave Oven. *C. A. LePage, J. Gordon, and E. A. Davis*
- 38** Reversed-Phase High-Performance Liquid Chromatography of Ethanol-Soluble and Ethanol-Insoluble Reduced Glutenin Fractions. *H. Wieser, W. Seilmeier, and H.-D. Belitz*
- 42** Processing Characteristics of Long-Grain Rice Grown Under Sprinkler or Flood Irrigation. *K. J. Mundy, J. S. Godber, S. M. Dabney, and R. Rao*
- 47** Protein-Lipid Interaction During Single-Screw Extrusion of Zein and Corn Oil. *M. T. Izzo and C.-T. Ho*
- 51** Water Retention of Two Types of Hexane-Defatted Corn Germ Proteins and Soy Protein Flour. *J. F. Zayas and C. S. Lin*
- 56** The Wheat Research Institute Chomper, an Instrument that Measures Crumb Flexibility. *D. W. Baruch and T. D. Atkins*
- 59** Using the Wheat Research Institute Chomper to Assess Crumb Flexibility of Staling Bread. *D. W. Baruch and T. D. Atkins*

- 65 NOTE: Rapid Testing Method for Characterizing the Rheological Behavior of Gelatinizing Corn Starch Slurries. *J. F. Steffe, M. E. Castell-Perez, K. J. Rose, and M. E. Zabik*

VOLUME 66, NUMBER 2

MARCH-APRIL 1989

- 69 Role of Sodium Bicarbonate and Trapped Air in Extrusion. *C. S. Lai, J. Guetzlaff, and R. C. Hosenev*
- 73 Effects of Selected Commercial Enzymes on Cookie Spread and Cookie Dough Consistency. *C. S. Gaines and P. L. Finney*
- 79 The Use of Gamma Irradiation for Inducing High-Protein Rice. *A. El-Shirbeeney and R. Mitkees*
- 81 Alveograph Algorithms to Predict Functional Properties of Wheat in Bread and Cookie Baking. *A. Bettge, G. L. Rubenthaler, and Y. Pomeranz*
- 87 Effect of Cultivar, Steeping, and Malting on Tannin, Total Polyphenol, and Cyanide Content of Nigerian Sorghum. *B. A. Osuntogun, S. R. A. Adewusi, J. O. Ogundiwin, and C. C. Nwasike*
- 90 A Rheological Characterization of Cereal Starch-Glactomannan Mixtures. *M. Alloncle, J. Lefebvre, G. Llamas, and J. L. Doublier*
- 94 Short-Term Lipidemic Responses in Otherwise Healthy Hypercholesterolemic Men Consuming Foods High in Soluble Fiber. *G. S. Ranhotra, J. A. Gelroth, R. D. Reeves, M. K. Rudd, W. R. Durkee, and J. D. Gardner*
- 97 Large-Scale Preparation and Properties of Oat Fractions Enriched in (1→3)(1→4)-β-D-Glucan. *P. J. Wood, J. Weisz, P. Fedec, and V. D. Burrows*
- 103 Influence of Wheat Bran Particle Size on Vitamins A and E and Cholesterol in Rats. *T. S. Kahlon, F. I. Chow, C. A. Hudson, F. T. Lindgren, and A. A. Betschart*
- 107 Physico-Chemical and Functional Properties of Rye Nonstarch Polysaccharides. I. Colorimetric Analysis of Pentosans and Their Relative Monosaccharide Compositions in Fractionated (Milled) Rye Products. *J. A. Delcour, S. Vanhamel, and C. De Geest*
- 112 Evaluation of the Precision of High-Performance Liquid Chromatography for Wheat Cultivar Identification. *M. G. Scanlon, H. D. Sapirstein, and W. Bushuk*
- 117 Physical, Chemical, and Dry-Milling Characteristics of Corn Hybrids from Various Genotypes. *A. J. Peplinski, M. R. Paulsen, R. A. Anderson, and W. F. Kwolek*
- 121 Rapid Purification of Wheat Glutenin for Reversed-Phase High-Performance Liquid Chromatography: Comparison of Dimethyl Sulfoxide with Traditional Solvents. *T. Burnouf and J. A. Bietz*
- 128 Water Activity and Moisture Content of Dough and Bread. *Z. Czuchajowska, Y. Pomeranz, and H. C. Jeffers*

- 133 NOTE: Electroendosmotic Preparative Electrophoresis as a One-Step Method for Purification of High Molecular Weight Subunits of Wheat Glutenin. *A. Curioni, A. Dal Belin Peruffo, and N. E. Pogna*
- 135 NOTE: High-Lysine Barley Screening with Fluorometry and Endoproteolytic Assays. *H. Ahokas and L. Naskali*

VOLUME 66, NUMBER 3

MAY-JUNE 1989

- 139 Inhibition Radioimmunoassay for *Aspergillus repens* Compared with Other Indices of Fungal Growth in Stored Corn. *S. L. Martin, J. Tuite, and M. A. Diekman*
- 144 Effects of Neutral Salts of the Lyotropic Series on the Physical Dough Properties of a Canadian Red Spring Wheat Flour. *K. R. Preston*
- 149 Baking Functionality of Reconstituted Rye Flours Having Different Nonstarchy Polysaccharide and Starch Contents. *M. C. Kühn and W. Grosch*
- 155 Effects of High-Fructose Corn Syrup Replacement for Sucrose on Browning, Starch Gelatinization, and Sensory Characteristics of Cakes. *J. M. Johnson, C. H. Harris, and W. E. Barbeau*
- 158 Effects of Acidulants in Controlling Browning in Cakes Prepared with 100% High-Fructose Corn Syrup or Sucrose. *J. M. Johnson and C. H. Harris*
- 161 Role of Ingredients in the Texture of a Flanlike Food. *R. S. Kadan and G. M. Ziegler, Jr.*
- 165 Distribution and Measurement of Aflatoxin in 1983 Iowa Corn. *S. G. Schmitt and C. R. Hurburgh, Jr.*
- 169 Effects of Gamma Irradiation on the Nutritional Quality of Grain and Legumes. I. Stability of Niacin, Thiamin, and Riboflavin. *A. Badshah Khattak and C. F. Klopfenstein*
- 171 Effect of Gamma Irradiation on the Nutritional Quality of Grains and Legumes. II. Changes in Amino Acid Profiles and Available Lysine. *A. Badshah Khattak and C. F. Klopfenstein*
- 173 Starch Paste Clarity. *S. A. S. Craig, C. C. Maningat, P. A. Seib, and R. C. Hosney*
- 182 Rheological Changes in Cracker Sponges During an 18-Hour Fermentation. *J. Y. Wu and R. C. Hosney*
- 186 Fast Horizontal Sodium Dodecyl Sulfate Gradient Polyacrylamide Gel Electrophoresis for Rapid Wheat Cultivar Identification and Analysis of High Molecular Weight Glutenin Subunits. *B. A. Marchylo, K. A. Handel, and V. J. Mellish*
- 193 Study of Proteins Extracted from the Surface of Wheat Starch Granules with Sodium Dodecyl Sulfate. *M. Seguchi and Y. Yamada*
- 196 Moisture Exchange Determined by a Conductance Meter in Single Kernels of Corn Blends. *Z. Czuchajowska, X. Chen, J. Harris, and Y. Pomeranz*

- 201 High-Fiber, Noncaloric Flour Substitute for Baked Foods. Properties of Alkaline Peroxide-Treated Lignocellulose. *J. M. Gould, B. K. Jasberg, L. B. Dexter, J. T. Hsu, S. M. Lewis, and G. C. Fahey, Jr.*
- 205 High-Fiber, Noncaloric Flour Substitute for Baked Foods. Effects of Alkaline Peroxide-Treated Lignocellulose on Dough Properties. *B. K. Jasberg, J. M. Gould, K. Warner, and L. L. Navickis*
- 209 High-Fiber, Noncaloric Flour Substitute for Baked Foods. Alkaline Peroxide-Treated Lignocellulose in Chocolate Cake. *B. K. Jasberg, J. M. Gould, and K. Warner*
- 213 Structure-Function Relationships of Alkaline Peroxide-Treated Lignocellulose from Wheat Straw. *J. M. Gould, B. K. Jasberg, and G. L. Cote*
- 217 Effects of Wheat Bran in Breadmaking. *C. S. Lai, R. C. Hosenev, and A. B. Davis*
- 220 Functional Effects of Shorts in Breadmaking. *C. S. Lai, R. C. Hosenev, and A. B. Davis*
- 224 Production of Whole Wheat Bread with Good Loaf Volume. *C. S. Lai, A. B. Davis, and R. C. Hosenev*
- 228 Differential Water Solubility of Corn and Sorghum Starches as Characterized by High-Performance Size-Exclusion Chromatography. *D. S. Jackson, R. D. Waniska, and L. W. Rooney*
- 233 Discrimination of Wheat and Nonwheat Components in Grain Samples by Image Analysis. *I. Zayas, Y. Pomeranz, and F. S. Lai*
- 238 Glycol Glucosides from Starch by Continuous Twin-Screw Extruder Processing. *M. E. Carr and R. L. Cunningham*
- 244 NOTE: Contribution of Proton Exchange to the Oxygen-17 Nuclear Magnetic Resonance Transverse Relaxation Rate in Water and Starch-Water Systems. *S. J. Richardson*
- 247 NOTE: Effect of Moisture Content on Popcorn Popping Volume for Oil and Hot-Air Popping. *D. D. Metzger, K. H. Hsu, K. E. Ziegler, and C. J. Bern*

VOLUME 66, NUMBER 4

JULY-AUGUST 1989

- 249 The Nutritive Value of Mixtures of Two Varieties of Bambarra Groundnut and Sorghum. *I. C. Obizoba*
- 252 Availability of Dietary Fiber in Extruded Wheat Bran and Apparent Digestibility in Rats of Coexisting Nutrients. *S. Aoe, M. Nakaoka, K. Ido, Y. Tamai, F. Ohta, and Y. Ayano*
- 256 Polyacrylamide Gel Electrophoresis and High-Performance Liquid Chromatography Patterns of Gliadins from Wheat Sections and Milled and Air-Classified Fractions. *G. L. Lookhart, M. Menkovska, and Y. Pomeranz.*

- 263 Emulsifying Properties of Corn Germ Proteins. *J. F. Zayas* and *C. S. Lin*
- 268 Correlation Between the Glass-Transition Point and Color Change of Heat-Treated Gluten. *Y. Fujio* and *J.-K. Lim*
- 270 Carotenoids and Retinoids in Finnish Foods: Cereal and Bakery Products. *M. Heinonen, V. Ollilainen, E. Linkola, P. Varo,* and *P. Koivistoinen*
- 273 Germ Weight, Germ Oil Content, and Estimated Oil Yield for Wet-Milled Yellow Dent Corn as Affected by Moisture Content at Harvest and Temperature of Drying Air. *C. L. Weller, M. R. Paulsen,* and *S. Mbuvi*
- 276 Noodles VIII. The Effect of Wheat Flour Lipids, Gluten, and Several Starches and Surfactants on the Quality of Oriental Dry Noodles. *K. L. Rho, O. K. Chung,* and *P. A. Seib*
- 283 Reversed-Phase High-Performance Liquid Chromatography Analysis of Changes in Free Amino Acids During Wheat Bread Dough Fermentation. *C. Benedito de Barber, J. A. Prieto,* and *C. Collar*
- 289 Isolation and Characterization of Lignin from Hard Red Spring Wheat Bran. *P. B. Schwarz, V. L. Youngs,* and *D. R. Shelton*
- 296 Genetic and Environmental Variation in Oil Content and Fatty Acid Composition of Oats. *M. Saastamoinen, J. Kumpulainen,* and *S. Numella*
- 300 Analysis of Volatile Compounds for Detection of Molds in Stored Cereals. *T. Börjesson, U. Stöllman, P. Adamek,* and *A. Kaspersson*
- 305 Differential Scanning Calorimetry, Water Activity, and Moisture Contents in Crumb Center and Near-Crust Zones of Bread During Storage. *Z. Czuchajowska* and *Y. Pomeranz*
- 310 An Assay of Molecular Mobility in Solid Corn Meal by Front-Face Fluorescence Anisotropy. *S. M. Gibson* and *G. Strauss*
- 313 Pie Crust Quality: Influence of Use of Fractionated and Reconstituted Soft Wheat Flour of Varied Protein Content. *M. E. Zabik* and *R. C. Tipton*
- 317 Differential Scanning Calorimetry of Whole Grain Milled Rice and Milled Rice Flour. *F. L. Normand* and *W. E. Marshall*
- 321 Rheological Changes of Fortified Wheat and Corn Flour Doughs with Mixing Time. *L. L. Navickis*
- 324 An Experimental Milling Technique for Various Flour Extraction Levels. *Y. Z. Li* and *E. S. Posner*
- 329 Effect of Damaged Starch on the Chapati-Making Quality of Whole Wheat Flour. *P. Haridas Rao, K. Leelavathi,* and *S. R. Shurpalekar*
- 333 Assessment of Potential Breadmaking Quality of Hard Spring Wheats by High-Performance Liquid Chromatography of Gliadins—Year Two. *F. R. Huebner*
- 337 Distribution of Aflatoxin, Citrinin, and Invading Fungal Mycelium in Rice Kernels Inoculated with *Aspergillus flavus* and *Penicillium citrinum*. *H. Takahashi, H. Yazaki, M. Manabe, S. Matsuura,* and *S. Kimura*

- 342 Enzyme-Resistant Starch. I. Characterization and Evaluation by Enzymatic, Thermoanalytical, and Microscopic Methods. *D. Sievert and Y. Pomeranz*
- 348 NOTE: Dry Roasted Pinto Bean (*Phaseolus vulgaris*) Flour in Quick Breads. *S. R. Alani, M. E. Zabik, and M. A. Uebersax*
- 350 NOTE: A Modified Electronic Torsion Sensor for a 10-Gram Mixograph with Computerized Data Acquisition and Analysis. *L. L. Navickis, R. O. Butterfield, and T. C. Nelsen*
- 353 NOTE: Discrimination of Rice Cultivars by Polyacrylamide Gel Electrophoresis and High-Performance Liquid Chromatography. *A. Hussain, M. G. Scanlon, B. O. Juliano, and W. Bushuk*
- 357 NOTE: Effects of Phytase from Three Yeasts on Phytate Reduction in Norwegian Whole Wheat Flour. *B. F. Harland and W. Frølich*

VOLUME 66, NUMBER 5

SEPTEMBER-OCTOBER 1989

- 359 Yield and Amino Acid Composition of Fractions Obtained During Tofu Production. *H. L. Wang and J. F. Cavins*
- 362 Characterization of Cereal Sugars and Oligosaccharides. *R. J. Henry and H. S. Saini*
- 365 Determination of Wheat Milling Potential and Its Influence on Flour Quality Deterioration Rate. *Y. Z. Li and E. S. Posner*
- 369 Wheat Pentosans. I. Cultivar Variation and Relationship to Kernel Hardness. *B. H. Hong, G. L. Rubenthaler, and R. E. Allan*
- 374 Wheat Pentosans. II. Estimating Kernel Hardness and Pentosans in Water Extracts by Near-Infrared Reflectance. *B. H. Hong, G. L. Rubenthaler, and R. E. Allan*
- 378 Soft Wheat Milling and Baking Quality in a Soft Red Winter × Hard Red Winter Wheat Population. *L. May, D. A. Van Sanford, and P. L. Finney*
- 382 Japanese Noodle Qualities. I. Flour Components. *H. Toyokawa, G. L. Rubenthaler, J. R. Powers, and E. G. Schanus*
- 387 Japanese Noodle Qualities. II. Starch Components. *H. Toyokawa, G. L. Rubenthaler, J. R. Powers, and E. G. Schanus*
- 391 The Effect of Wheat Flour Proteins on Mixing and Baking—Correlations with Protein Fractions and High Molecular Weight Glutenin Subunit Composition by Gel Electrophoresis. *K. Khan, G. Tamminga, and O. Lukow*
- 397 Inheritance of Gluten Protein Components of High-Protein Hard Red Spring Wheat Lines Derived from *Triticum turgidum* var. *dicoccoides*. *K. Khan, R. Frohberg, T. Olson, and L. Huckle*
- 402 Physical and Sensory Evaluation of Lean White Cakes Containing Substituted Fluffy Cellulose. *E. B. Fondroy, P. J. White, and K. J. Prusa*

- 405 Reduced Variance in the Sugar-Snap Cookie Baking Method Using a Cylinder and Plunger to Produce a More Uniform Dough. *P. L. Finney and C. S. Gaines*
- 407 Milling and Baking Quality of Soft White Wheat Genotypes Subjected to Preharvest Sprouting. *M. E. Sorrells, A. H. Paterson, and P. L. Finney*
- 411 Investigations of Sugar-Starch Interactions Using Carbon-13 Magnetic Resonance. I. Sucrose. *L. M. Hansen, C. S. Setser, and J. V. Paukstelis*
- 415 An Improved Colorimetric Method for Determining Antitryptic Activity in Soybean Products. *K. Liu and P. Markakis*
- 422 Effect of Hybrid and Physical Damage on Mold Development and Carbon Dioxide Production During Storage of High-Moisture Shelled Corn. *D. Friday, J. Tuite, and R. Stroshine*
- 427 Soil Moisture Effects on Bread Loaf Quality and Evaluation of Gliadins with Reversed-Phase High-Performance Liquid Chromatography. *J. R. Bunker, R. H. Lockerman, C. F. McGuire, T. K. Blake, and R. E. Engel*
- 432 Changes in Maturing Wheat as Determined by Near-Infrared Reflectance Spectroscopy. *Z. Czuchajowska and Y. Pomeranz*
- 435 Carbohydrate-Degrading Enzymes in Germinating Wheat. *A. M. Corder and R. J. Henry*
- 439 Computerized Wheat Varietal Identification by High-Performance Liquid Chromatography. *M. G. Scanlon, H. D. Sapirstein, and W. Bushuk*

VOLUME 66, NUMBER 6

NOVEMBER-DECEMBER 1989

- 445 Postharvest Contamination of Thai Corn with *Aspergillus flavus*. *P. Siriacha, K. Kawashima, S. Kawasugi, M. Saito, and P. Tonboon-Ek*
- 448 Prediction of Baking Quality of Bread Wheats in Breeding Programs by Size-Exclusion High-Performance Liquid Chromatography. *T. Dachkevitch and J.-C. Autran*
- 456 Studies in Vitality of Commercial Gluten. I. Physical, Chemical, and Technological Characteristics. *C. K. Wadhawan and W. Bushuk*
- 461 Studies on Vitality of Commercial Gluten. II. Solubility Fractionation, Electrophoresis, and Fluorescence Results. *C. K. Wadhawan and W. Bushuk*
- 466 Image Analysis and Characterization of Cereal Grains with a Laser Range Finder and Camera Contour Extractor. *C. Chen, Y. P. Chiang, and Y. Pomeranz*
- 471 Differentiation of Wheat Based on Fluorescence, Hardness, and Protein. *D. W. Irving, R. G. Fulcher, M. M. Bean, and R. M. Saunders*

- 478 Protein Composition of a High-Protein Barley Flour and Barley Grain. *R. Linko, A. Lapveteläinen, P. Laakso, and H. Kallio*
- 483 A Microwave Oven Procedure for Soybean Moisture Content Determination. *N. Sharma and M. A. Hanna*
- 486 Rheological and Sensory Characteristics of Bread Flour and Whole Wheat Flour Doughs and Breads Containing Dry-Roasted Air-Classified Pinto and Navy Bean High-Protein Fractions. *S. M. Silaula, N. L. Lorimer, M. E. Zabik, and M. A. Uebersax*
- 491 Influence of Alkylresorcinols from Rye and Related Compounds on the Growth of Food-borne Molds. *J. Reiss*
- 493 Comparison of Starch Pasting Properties in the Brabender Viscoamylograph and the Rapid Visco-Analyzer. *L. B. Deffenbaugh and C. E. Walker*
- 499 Acetylated and Hydroxypropylated Wheat Starch: Paste and Gel Properties Compared with Modified Maize and Tapioca Starches. *S. Takahashi, C. C. Maningat, and P. A. Seib*
- 506 Protein-Rich Residue from Ethanolic Fermentation of High-Lysine Dent, Waxy, and White Corn Varieties. *Y. V. Wu*
- 510 High-Performance Liquid Chromatography Analysis of Phytic Acid on a pH-Stable, Macroporous Polymer Column. *J. Lehrfeld*
- 516 Comparison of Flavonoids in Bran of Four Classes of Wheat. *Y. Feng and C. E. McDonald*
- 519 Measuring Kernel Hardness Using the Tangential Abrasive Dehulling Device. *J. W. Lawton and J. M. Faubion*
- 525 NOTE: Effect of Alkalinity on Yield, Seed Quality, and Biochemical Characteristics in *Setaria italica* L. *S. K. Thimmaiah, D. P. Viswanath, B. X. Vyakarnahal, and C. S. Hunshal*
- 527 NOTE: A Five-Gram Mixograph to Determine and Predict Functional Properties of Wheat Flours. *K. F. Finney*
- 531 NOTE: Possible Linkage of Falling Number Value with Gliadin Proteins in Wheats with Genes for Improved Sprouting Resistance. *O. M. Lukow, P. L. Dyck, and W. Bushuk*
- 532 NOTE: Changes in Gliadin Proteins During Cookie Making. *Y. Pomeranz, G. L. Lookhart, G. L. Rubenthaler, and L. Albers*
- 535 COMMUNICATION TO THE EDITOR: Chloroform/Methanol-Soluble Proteins are the Main Components of *Triticum durum* Sulfur-Rich Glutenin Fractions. *M.-F. Gautier, R. Alary, K. Kobrehal, and P. Joudrier*
- 536 COMMUNICATION TO THE EDITOR: A New Perspective on Glutenin Structure Based on Fractionation by Free-Flow Preparative Isoelectric Focusing. *P. K. W. Ng, E. Slominski, W. J. Johnson, and W. Bushuk*
- 539 *Cereal Chemistry* Editors and Staff
- 540 Author Index, Volume 66
- 543 Subject Index, Volume 66
- 547 Contents Index, Volume 66