

American Society of Agricultural & Biological
Engineers

Annual International Meeting of
the American Society of
Agricultural & Biological Engineers
2007

June 17-20, 2007
Minneapolis, Minnesota, USA

Volume 1 of 10

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

ISBN: 978-1-60423-961-4

Some format issues inherent in the e-media version may also appear in this print version.

American Society of Agricultural & Biological Engineers

Annual International Meeting of the American
Society of Agricultural & Biological Engineers
2007

TABLE OF CONTENTS

VOLUME I

| | |
|---|-----|
| A Comparison of Kriging, Regression, and Regression-Kriging with Reflectance Spectral Data for Soil Property Determination | 1 |
| <i>Yufeng Ge, J. Alex Thomasson, Ruixiu Sui</i> | |
| Developing Nematode Management Zones Using Soil EC and pH Data..... | 9 |
| <i>C. D. Perry, D. G. Sullivan, B. V. Ortiz, K. S. Rucker, G. Vellidis</i> | |
| Application of Ion-Selective Electrodes for Simultaneous Analysis of Soil Macronutrients | 16 |
| <i>H. J. Kim, K. A. Sudduth, J. W. Hummel, S. T. Drummond</i> | |
| Transient Detection of Soil Water Content and Mechanical Resistance by a Horizontal Penetrometer Combined With an Impedance Sensor | 29 |
| <i>P. Schulze Lammers, Y. Sun, D. Ma</i> | |
| DGPS Navigation Control System for Rice Transplanter under Paddy Field Conditions | 41 |
| <i>Zhang Zhigang , Luo Xiwen</i> | |
| Autonomous Vehicle Navigation Through the Headlands of Citrus Groves | 51 |
| <i>Vijay Subramanian, Thomas Burks, Xu Zhao</i> | |
| Stereo Vision Based Trajectory Tracking for Agricultural Vehicles | 63 |
| <i>Qi Wang, Qin Zhang, Yizhou Yu</i> | |
| Studies on Off-gassing During Storage of Wood Pellets | 81 |
| <i>T. J. Shankar, S. Mani, S. Sokhansanj, C. J. Lim, X. Bi, S. Melin</i> | |
| Electronic Estimation of Hay Moisture Content: Precision and Accuracy | 95 |
| <i>E. Cormier, H. Joannis, P. Savoie</i> | |
| Power Efficiency Analysis of Combine Harvester in Field Operation | 106 |
| <i>Qing Wei, Qin Zhang, Zhihuai Mao</i> | |
| Spatially Monitoring Tractor Performance to Improve In-Field Operation..... | 116 |
| <i>C. M. Kichler, J. P. Fulton, T. P. McDonald, W. C. Zech, C. J. Brodbeck</i> | |
| Investigating Machinery Management Parameters with Computer Tools | 126 |
| <i>R. D. Grisso, J. S. Cundiff, D. H. Vaughan</i> | |
| Modeling the Interaction of Plant Architecture and Pesticide Application Techniques | 140 |
| <i>Gary Dorr, Jim Hanan, Andrew Hewitt, Steve Adkins, Barry Noller</i> | |
| The Influence of Turbulence on Particle Trajectory and Deposition in a Forest Canopy | 151 |
| <i>Milton E. Teske, Harold W. Thistle</i> | |
| Mass Balance of Citrus Spray Applications..... | 159 |
| <i>M. Salyani, M. Farooq, R. D. Sweeb</i> | |
| Pasture Nitrogen Status Identification Using a Balloon Remote Sensing Platform | 171 |
| <i>F. A. Pinto, M. C. Silva Junior, D. M. Queiroz, L. B. Vieira</i> | |

| | |
|---|-----|
| Monitoring Crop Growth by Multi-temporal CIR Image Data..... | 179 |
| <i>Haitao Xiang, Lei Tian</i> | |
| Wavelength Identification for Reflectance Estimation of Surface and Subsurface Soil Properties..... | 193 |
| <i>K. S. Lee, D. H. Lee, K. A. Sudduth, S. O. Chung, S. T. Drummond</i> | |
| Development of an Optical Yield Monitor for Sugar Cane Harvesting | 206 |
| <i>R. R. Price</i> | |
| Evaluation of a UWB Radar System for Yield Mapping of Sugar Beet..... | 233 |
| <i>Sebastian Woeckel, Peter Schulze Lammers, Juergen Sachs</i> | |
| Evaluation of Parameters for Yield Measurement of Grass in a Mower Conditioner | 246 |
| <i>Karl Wild, Sandro Ruhland, Sieghart Haedicke</i> | |
| Spectral Imagery Feedback As a Joint Trigger to the TTT Method of Automated Irrigation..... | 254 |
| <i>Susan A. O'Shaughnessy</i> | |
| Comparison of Airborne Multispectral and Hyperspectral Imagery for Yield Estimation..... | 267 |
| <i>Chenghai Yang, James H. Everitt, Joe M. Bradford</i> | |
| Application of Motorcycle Techniques for Developing Light Agriculture Power Machines..... | 280 |
| <i>Zhiwei Li, Hongmei Xia, Dingke Zheng, Yanjuan Huang</i> | |
| The Mechanical Properties and Constitutive Equations of Sugarcane Stalk..... | 289 |
| <i>Wang Wanzhang, Qing Shangle , Cheng Haibo</i> | |
| Analyse the Emissions of Pulse Engines..... | 296 |
| <i>Hongping Zhou, Youlin Xu, Yemin Cui</i> | |
| Analysis and Design on Hydraulic Driving System of the Whole Stalk Sugarcane Harvester..... | 306 |
| <i>Zhiwei Li</i> | |
| Wide-swath Spray Application in Ornamental Nurseries with Cannon Air Jet Sprayer | 313 |
| <i>Heping Zhu</i> | |
| Research on the 4ZG-2.1 Type Arundo Donaxl Harvester..... | 325 |
| <i>Liao Qingxi, Tian Boping, Shu Caixia, Liao Yitao</i> | |
| Effectiveness of Different Herbicide Applicators Mounted on a Roller/crimper for Accelerated Termination of Rye Cover Crop | 334 |
| <i>Ted S. Kornecki, Andrew J. Price, Quentin M. Stoll</i> | |
| Sugar Cane Crop Residues and Bagasse for Cogeneration in Brazil..... | 344 |
| <i>M. L. C. Ripoli, T. C. C. Ripoli, N. A. Villa Nova</i> | |
| Evaluation of Five Sugar Cane Planters | 353 |
| <i>M. L. C. Ripoli, T. C. C. Ripoli, D. V. Casagrandi, B. I. Ide</i> | |
| Study on Tilt Leveling System for Wet Paddy Leveler..... | 369 |
| <i>Maohua Wang, Zuoxi Zhao, Zaiman Wan</i> | |
| Site Specific Fumigant Applicator for Prevention of Almond Replant Disease | 377 |
| <i>Robert W. Coates, Mir S. Shafii, Shrini K. Upadhyaya, Greg T. Browne</i> | |
| Optimization of Direct Nozzle Injection System for Side Specific Herbicide Application..... | 387 |
| <i>J. Vondricka, P. Hloben, P. Schulze Lammers</i> | |
| Design of a GPS/GIS-based Variable Rate Irrigating Hill-seeder | 400 |
| <i>Qing Yang; Shuming Yang; Yongjun Li; Chenghai Yang</i> | |

| | |
|--|-----|
| Development of Agricultural Field DEM Using Repeated GPS Measurements from Field Operations..... | 406 |
| <i>S. A. Aziz, B. L. Steward, S. Han, M. Karkee</i> | |
| Precision Management Systems for Conservation and Profitability..... | 418 |
| <i>Kenneth A. Sudduth, Newell R. Kitchen, E. John Sadler, Robert J. Kremer, Robert N. Lerch</i> | |
| Evaluate Potential Water Quality Trading Sites with Network Analysis | 433 |
| <i>Ming-Chieh Lee, Kyle R. Mankin, Jeffrey M. Peterson</i> | |
| GIS and Spatial Technologies for Management Decision Making..... | 451 |
| <i>C. J. Brodbeck, J. P. Fulton, J. N. Shaw, T. P. McDonald, D. A. Rodekohr</i> | |
| Development of Forest Stewardship Program Spatial Analysis Project for Idaho Land Management Planning | 464 |
| <i>S. S. Panda, S. H. Ahmed, S. Jude, T. Morgan, K. David</i> | |
| GIS Based Transportation Policies for a Biomass Processing Plant – A Comparative Analysis..... | 484 |
| <i>Ravula, P. R., J. S. Cundiff, R. D. Grisso</i> | |
| Spatial Variability of Field Properties Across Nematode Management Zones..... | 496 |
| <i>Brenda Ortiz, Dana Sullivan, Calvin Perry, George Vellidis</i> | |
| Geo-spatial Modeling of Wine Grape Quality for Differential Harvesting | 510 |
| <i>B. Sethuramasamyraja</i> | |
| Effect of No-Tillage compared to Moldboard Plow on Corn Yield in the NE Quarter of USA | 521 |
| <i>Thomas S. Colvin</i> | |
| Transition from Conventional to No Tillage in Poorly Drained Heavy Clay | 533 |
| <i>Jarrett Wylde, Ying Chen</i> | |
| Effect of Timing of In-Row Subsoiling on Soil Properties, Cover Crop Production, and Cotton Production | 544 |
| <i>F. J. Arriaga, K. S. Balkcom, J. S. Bergtold, T. S. Kornecki, A. J. Price, E. B. Schwab</i> | |
| Investigation Into the Effectiveness of Residue Managers and Wheels with Direct Seeded Field Crops..... | 552 |
| <i>Lawrence Papworth, Abid Shah, Blaine Metzger</i> | |
| Theoretical Analysis and Proposed Methods for Enhancing the Tractive Performance of a Prototype Rubber Track..... | 562 |
| <i>Hlm Du Plessis, Dj Gouws</i> | |
| Interpretation of Empirical Parameters Involved in the UC Davis Traction Prediction Equations | 575 |
| <i>Shrini K. Upadhyaya</i> | |
| Three Single Wheel Machines for Traction Research | 585 |
| <i>Thomas R. Way</i> | |
| The Cause of Powerhop;..... | 608 |
| <i>Frank M. Zoz</i> | |
| Commercializing Alternative Cotton Harvest Preparation Technology | 625 |
| <i>P. Funk</i> | |
| Investigation into the Use of Picker Harvesters on the High Plains of Texas: Harvest Parameters | 642 |
| <i>William B. Faulkner, John D. Wanjura, Bryan W. Shaw</i> | |
| Radio Frequency Drying of Seed Cotton..... | 653 |
| <i>Kevin D Baker, Ed Hughs</i> | |

| | |
|--|-----|
| Modeling Torque and Power Requirements for a Deep Tilling Down-cut Rotavator | 655 |
| <i>M. O Marenja; H L M Du Plessis</i> | |
| A Mathematical Model for Sub-soil Stress Estimation Using Smooth Steel Roller for Landmine Neutralization | 667 |
| <i>Jude Liu, Radhey Lal Kushwaha</i> | |
| Soil Whipping Machine for Detonating Anti-personnel Mines. | 678 |
| <i>Gedalyahu Manor, Randy Raper</i> | |
| Experimental Validation of CFD Modeling for Narrow Tillage Tool Draft..... | 684 |
| <i>S. Karmakar, S. R. Ashrafi Zadeh, R. L. Kushwaha</i> | |
| Cone Index Before and After Ploughing of Stony Clay Soil As a Function of Depth and Moisture..... | 695 |
| <i>A. A. Najm, M. M. Sidahmed</i> | |
| The Application of Adaptive Control in Autonomous Irrigation Mobile Robot Localization | 710 |
| <i>Shichao Ou, Yu Shouhua, Chen Liancheng, He Xiaolong</i> | |
| An Autonomous Helicopter System for Aerial Image Collection..... | 722 |
| <i>Haitao Xiang, Lei Tian</i> | |

VOLUME II

| | |
|---|-----|
| Collect and Analyze the Distributing Information of Wheat Yield | 733 |
| <i>Yuan Yanwei; Zhang Xiaochao</i> | |
| Once-Over Harvest of Several Leafy Greens for Processing | 745 |
| <i>J. L. Glancey</i> | |
| Spatial and Temporal Variability of Coffee Quality | 754 |
| <i>Daniel Marçal De Queiroz; Enrique Anastácio Alves; Francisco De Assis De Carvalho Pinto; Selma Alves Abrahão</i> | |
| Analys of Coffee Harvesting Process by Vibration | 763 |
| <i>Daniel Marçal De Queiroz; Fábio Lúcio Dos Santos; Francisco De Assis De Carvalho Pinto; Enrique Anastácio Alves</i> | |
| Spray Capture by a Riparian Barrier | 776 |
| <i>Harold Thistle, George Ic</i> | |
| The Effect of Spray Volume and Quality on Handgun Delivery of Pesticides to Greenhouse Plants | 789 |
| <i>R. Derksen, J. Frantz, C. Ranger, J. Locke, H. Zhu, C. Krause</i> | |
| Nozzle and Carrier Application Effects on Control of Soybean Leaf Spot Diseases..... | 801 |
| <i>H. Mark Hanna, Alison Robertson, W. Mark Carlton, Robert E. Wolf</i> | |
| Comparison of Low-Drift Nozzles for Canopy Penetration in Cotton | 817 |
| <i>Paul E. Sumner, Phillip Roberts, Phillip Edwards</i> | |
| Wheat Direct Seeders Research & Development for Two Crops a Year Area of Center China..... | 826 |
| <i>H. Gao, H. Li, Z. Yao</i> | |
| Multivariate Classifiers Using Image Texture Features for Nitrogen Doses Discrimination in Wheat | 833 |
| <i>D. G. Sena Jr.; F. A. C. Pinto; D. M. Queiroz; M. A. Souza</i> | |
| Agricultural Engineering Services as Rural Development Intervention in the Corn Cluster Areas of Region IV-B, Philippines..... | 842 |
| <i>NO AUTHOR GIVEN</i> | |

| | |
|---|------|
| A Method of Calculating the Economic Impact of Poor Fertiliser Spreading..... | 857 |
| <i>I. Yule, H. Lawrence</i> | |
| Corrections for Simultaneous Measurements of Soil Water Content and Salinity Using a Capacitance Sensor..... | 864 |
| <i>A. Ritter, C. Regalado</i> | |
| A Methodology to Classify Agricultural Tractors According to their Energy Efficiency | 875 |
| <i>J. Ortiz-Canavate, V. Gil-Quiros, J Gil-Sierra, J. Casanova</i> | |
| A Comparison of Pipeline Vs Truck Transport of Bio-oil | 886 |
| <i>T. Pootakham, A. Kumar</i> | |
| A Review of Techno-economics of Bio-hydrogen Production Technologies | 899 |
| <i>S. Sarkar, A. Kumar</i> | |
| Navigation Geographic Information System for Intelligent Farming Machine | 912 |
| <i>Z. Zhou, X. Luo, Z. Zhang, Y. Zang, J. Hu</i> | |
| Change in IDF Curves for a River Basin in Southern Ontario..... | 921 |
| <i>S. Ahmed, R. Rudra, B. Gharabaghi, A. Singh, S. Das</i> | |
| A Simple Empirical StreamFlow Prediction Model for Ungauged Watersheds..... | 934 |
| <i>Jose L. Chavez, Prasanna H. Gowda, Ricardo Griffin, Samuel Rivera, Christopher M.U. Neale</i> | |
| Modeling of Subsurface Lateral Movement of Water on Top of a Shallow Hardpan | 946 |
| <i>Camilo Cornejo, Rao Mylavarampu</i> | |
| Investigation and Evaluation of the Water Quality of Two Selected Dams in Nigeria | 954 |
| <i>E. Adebola</i> | |
| Study on the Model of Groundwater System for Halajun Area in Xinjiang..... | 961 |
| <i>Peiling Gao, Tingwu Lei</i> | |
| Relationships Between Lai and Landsat TM Spectral Vegetation Indices in the Northern Highplains of Texas..... | 969 |
| <i>P. H. Gowda, J. L. Chavez, P.D. Colaizzi, T. A. Howell, R.C. Schwartz, T.A. Marek</i> | |
| Evapotranspiration Losses for Drip-irrigated Watermelon in Shallow Water Table and Sandy Soil Conditions | 977 |
| <i>Sanjay Shukla; Saurabh Srivastava</i> | |
| Water Flux and Drainage from Soil Measured with Automated Passive Capillary Wick Samplers | 988 |
| <i>J.D. Jabro</i> | |
| <i>J.D. Jabro, J. Kim, R.G. Evans</i> | |
| Enhancement of the SATEEC Soil Erosion and Sediment Modeling System with Better Sediment Delivery Ratio Module | 998 |
| <i>Ki-Sung Kim, Kyoung Jae Lim, Joongdae Choi, Bernie Engel, Ji-Hong Jeon, Yoon-Sik Park, Jong-Gun Kim, Sung-Gu Heo, Yong-Chul Shin</i> | |
| WQTIPS: Water Quality Trading Information Platform System..... | 1007 |
| <i>Ming-chieh Lee, Kyle R. Mankin, J.M. Shawn Hutchinson</i> | |
| Development of Optimization Module in the WHAT Web GIS System for Accurate Hydrograph Analysis and Model Application | 1023 |
| <i>Kyoung Jae Lim, Jong-Gun Kim, Bernie Engel, Ji-Hong Jeon, Yong-Chul Shin, Sung-Gu Heo, Yoon-Sik Park, Ki-Sung Kim, Joongdae Choi</i> | |
| Real Time WWW Broadcasting of Soil Moisture Index for Drought Response | 1034 |
| <i>Won-Ho Nam, Ok-kyung Kim, Jin-Yong, Choi</i> | |

| | |
|--|------|
| Analysis of Watershed Physical and Hydrological Effects on Baseflow Separation | 1045 |
| <i>Amir P. Nejadhashemi, Adel Shirmohammadi, Hubert J. Montas, Joseph M. Sheridan, David D. Bosch</i> | |
| Groundwater Mounding and Contaminant Transport Beneath Stormwater Infiltration Basins..... | 1066 |
| <i>Mike Nimmer, Anita Thompson</i> | |
| Evaluation of an Anaerobically Enhanced Bioretention Cell's Treatment of First Flush from Highway Runoff | 1081 |
| <i>Charles V. Privette III, Bradley L. Weeber</i> | |
| SWAT Simulations of Nutrient Loadings in the Arroyo Colorado Watershed..... | 1092 |
| <i>W. D. Rosenthal</i> | |
| Comparing Two Most Widely Used Agricultural Watershed Models, SWAT and ANNAGNPS, to Choptank River Watershed in Maryland..... | 1102 |
| <i>Ali M. Sadeghi, Kwang S. Yoon, Carri Graff, Greg McCarty, Laura McConnell, Adel Shirmohammadi</i> | |
| Estimation of Groundwater Recharge in South Florida Using Drainage Lysimeters | 1122 |
| <i>Sanjay Shukla, Fouad H. Jaber</i> | |
| Estimating North Korea Agricultural Water Demand Using Satellite Images and GIS | 1135 |
| <i>Sung-Han Yoon, Jin-Yong Choi, Min-Won Jang, Seung-Hwan Yoo</i> | |
| The Reduction of Phosphorus Effluence from Greenhouse Canal Soil using Amendments in Korea | 1149 |
| <i>Sung-Wook Yun, Seung-Hwan Baek, Jin-Chul Park, Chan Yu</i> | |
| Chapel Branch Creek TMDL Development: Integrating TMDL development with implementation..... | 1162 |
| <i>T. M. Williams, D. M. Amatya, D. Hitchcock, N. Levine</i> | |
| USLE "C" Factors for Louisiana Sugarcane | 1176 |
| <i>R.L. Bengtson, H. M. Selim</i> | |
| Evolution of Vegetated Waterways Design | 1188 |
| <i>Sherry L. Hunt, Gregory J. Hanson, Darrel M. Temple, Ronald J. Tejral</i> | |
| Regional Scale Application of USLE and WEPP Model for Soil Erosion Assessment in Korea..... | 1196 |
| <i>Dennis C. Flanagan, Jim R. Frankenberger, Charles R. Meyer, Kang-Ho Jung</i> | |
| Laboratory Experimental Study on Runoff and Erosion Possesses from a Small Catchment Under Rain-simulator | 1205 |
| <i>L. Qu, T. Lei, L. Yan, J. Zhao</i> | |
| Effects of Erodibility on Rill Erosion Processes: A Model Study with Finite Element Method | 1218 |
| <i>L. J. Yan, T. W. Lei, L. Q. Qu, Q. W. Zhang</i> | |
| Capping Efficiency, Soil Armouring and Sediment Yield of Restored Slopes at Coal Mine in the West Coast of New Zealand..... | 1229 |
| <i>T.A. Cochrane, G. Jack, P. Weber</i> | |
| A Study on the Discharge Characteristics of Pollutant Loads according to Rainfall in Small Watershed..... | 1243 |
| <i>S.-J. Kim</i> | |
| Sensitivity Analysis of SWAT Nutrient Modeling of Field Scale Till and No-till Practices | 1251 |
| <i>Devanand Maski, Kyle R. Mankin</i> | |

| | |
|--|------|
| The Impact of Different Levels of Nitrogen Fertigation and Irrigation on Nitrogen Leaching and Yield of Corn Silage | 1271 |
| <i>M. Gheysari, S. M. Mirlatifi, M. Homaei, M. E. Asadi, G. Hoogenboom</i> | |
| Management of Flood Irrigated Alfalfa Checks Based on Monitoring and Modelling Wetting Front Advance Rate to Minimize Tail Drainage | 1283 |
| <i>R. Saha, J. Oliveira, S. K. Upadhyaya, W.W. Wallander, D.C. Slaughter</i> | |
| A Study on the Analysis Techniques of Economic Feasibility for Automated agricultural water management Systems in Korea | 1297 |
| <i>YongKeun Jee</i> | |
| Growth Analysis of Castor Oil Plant, Cultivate BRS 149 Northeasterner, Under the Effects of Irrigation with Treated Wastewater | 1306 |
| <i>Josilda de França Xavier, Napoleão Esberard de Macêdo Beltrão, Carlos Alberto Vieira de Azevedo, Antonio Ricardo Santos de Andrade, Vera Lúcia Antunes de Lima, José Dantas Neto</i> | |
| Macronutrientes in the Soil and in the Lettuce After the Irrigation with Effluents of Pond of Stabilization..... | 1316 |
| <i>Tatiana de Lima Tavares, Annemarie Konig, Beatriz Suzana Ovrusky de Ceballos, Carlos Alberto Vieira de Azevedo, Roberto Vieira Pordeus</i> | |
| Influence of Different Volumes of Water and Soil Covering on the Initial Growth of the Coconut Tree..... | 1327 |
| <i>Cláudia Germana da Fonseca Santos, Carlos Alberto Vieira de Azevedo, Hugo Orlando Carvallo Guerra, Antonio Ricardo Santos de Andrade, José Dantas Neto, Roberto Vieira Pordeus</i> | |
| Avaliação Do Extrato De Saturação De Um Solo Cultivado Com Algodão Colorido E Irrigado Com Água Residuária Tratada..... | 1338 |
| <i>Wagner Walker Albuquerque Alves, Carlos Alberto Vieira de Azevedo, José Dantas Neto, José Tavares de Sousa, Vera Lúcia Antunes de Lima</i> | |
| Effect of Different Salinity Levels of Irrigation Water on Absorption of K+, Dry Matter Production and Gross Protein in Sorghum (Bicolor Sorghum L. Moench) | 1347 |
| <i>Francisco Jardel Rodrigues Paixão, Antonio Ricardo Santos de Andrade, Maria do Socorro da Conceição Domingos, Ricardo L. Lange Ness, Carlos Alberto Vieira de Azevedo, Ticiana L. Costa</i> | |
| Chemical Characteristics of the Soil After the Cultivation of Corn Irrigated with Treated Wastewater | 1355 |
| <i>Márcia Rejane de Queiroz Almeida Azevedo, Napoleão Esberard de Macedo Beltrão, Annemarie Konig, Carlos Alberto Vieira de Azevedo, Tatiana de Lima Tavares, Roberto Vieira Pordeus</i> | |
| NCA&T Farm: Building a Geospatial Database for Planning and Development from the Ground Up | 1364 |
| <i>G. Gayle, G. Tang, K. Suda, L. Sulewski, M. Washington, T. Vaughan</i> | |
| Beaver Dam Effects on Ecohydraulics and Sedimentation in a Midwestern U.S. Agricultural Watershed..... | 1376 |
| <i>M.C. McCullough, Dean E. Eisenhauer, M.G. Dosskey, D.M Admiraal</i> | |
| Simulation of Overland Flow Producing Hydrologically Active Areas in Shallow Water Table Environment..... | 1386 |
| <i>S. Sen, P. Srivastava, K. Yoo, J. N. Shaw, J. Dane, M. S. Kang</i> | |
| Sensitivity Analysis and Interdependence of the SWAT Model Parameters | 1399 |
| <i>Confesor, R. B., G.W. Whittaker</i> | |
| Determination of Uncertainty in Measured Streamflow and Water Quality Data and Application to Model Evaluation | 1412 |
| <i>Daren Harmel, Raymond Slade, Kevin King, Patti Haan</i> | |

| | |
|---|------|
| Development of a Multi-objective Optimization Tool for the Selection and Placement of BMPs for Nonpoint Source Pollution Control | 1414 |
| <i>Chetan M., I. Chaubey, J. Popp, M. Gitau</i> | |
| Multivariate Analysis of Temporal and Spatial Variability of Water Quality in the Southern Indian River Lagoon (IRL), Florida | 1428 |
| <i>Yun Qian, Kati White Migliaccio, Yongshan Wan, Yuncong Li</i> | |
| Understanding Spatial Patterns of Soil Moisture at the Field Scale..... | 1441 |
| <i>Lingyuan Yang, Amy Kaleita</i> | |
| Effectiveness of Sedum Plant to control soil erosion from an Acid Soil..... | 1454 |
| <i>R.H. Andry, T. Yamamoto, V. Rasiah, M. Inoue</i> | |

VOLUME III

| | |
|---|------|
| Unpaved Road Fugitive Dust Control and Road Stabilization using Processed Installation Solid Waste..... | 1465 |
| <i>Niels G. Svendsen, Ryan R. Busby, Dick L. Gebhart, Robert Hegarty, Greg Muleski, Chat Cowherd</i> | |
| Numerical modeling of Bank Instability by Groundwater Seepage..... | 1477 |
| <i>M. Agor, G.V. Wilson, G.A. Fox</i> | |
| Nitrogen Concentrations in Runoff as Affected by Crop Residue..... | 1489 |
| <i>J.E. Gilley, J.E. Nicolaisen, B. Eghball, D.B. Marx</i> | |
| Simulation of the Sediment Transport on Lake Saemangeum in Korea using 2-Dimensional Numerical Analysis Model..... | 1502 |
| <i>Cho Young-kyoung, Kim Hak-kwan, Kang Min-goo, Park Seung-woo</i> | |
| The NRCS Stream Restoration Design Handbook | 1513 |
| <i>Kerry M. Robinson, Jon Fripp, Jerry Bernard</i> | |
| Measurement of Water Residence Time, Flowpath and Sediment Oxygen Demand in Seasonally Inundated Floodplain Swamps of the Georgia Coastal Plain..... | 1525 |
| <i>M. Jason Todd, George Vellidis, Catherine M. Pringle</i> | |
| Sediment Impacts from Natural Gas Exploration and Production Sites..... | 1537 |
| <i>David J. Wachal; Kenneth E. Banks</i> | |
| Assessing Low Water Fords and Impacts on Stream Stability at Fort Riley, Kansas | 1547 |
| <i>Gilbert Malinga, James M. Steichen, Stacy L. Hutchinson, Tim Keane, Phillip Woodford</i> | |
| An Improved Express Fraction for Modeling Macropore and Subsurface Drain Interaction..... | 1571 |
| <i>Garey Fox, Onur Akay, Rob Malone, Liwang Ma, George Sabbagh</i> | |
| Field Verification of Ground Water Pollution Potential in Fractured Environments Using Modified DRASTIC Methodology | 1583 |
| <i>Ann D. Christy, Julie Weatherington-Rice, Michael Angle, Linda Aller</i> | |
| Mapping of Agricultural Management in Hoagland Watershed for Simulating the Effects of Drainage Water Management | 1594 |
| <i>Srinivasulu Ale, Bibi Naz, Laura Bowling</i> | |
| Evapotranspiration Mapping using METRIC for a Region with Highly Advective Conditions | 1606 |
| <i>J. L. Chavez, P.H. Gowda, S.R. Evett, T.A. Howell, T. Marek</i> | |
| Development of Bahiagrass Crop Coefficient in a Humid Climate | 1618 |
| <i>Xinhua Jia, Michael D. Dukes, Jennifer M. Jacobs</i> | |

| | |
|---|------|
| A Comparison Study of MODIS and ASCE Alfalfa Evapotranspiration in a Semi-arid Climate | 1631 |
| <i>Ayman A. Suleiman, Jawad T. Al-Bakri, Mohamed Duqqah</i> | |
| Determination of the FAO-56 Crop Coefficients for Peanut under Deficit Irrigation in a Humid Climate | 1639 |
| <i>Ayman A. Suleiman, Cecilia M. Tojo Soler, Gerrit Hoogenboom</i> | |
| Physical Model Study on a RCC Stepped Spillway for Renwick Dam, North Dakota..... | 1648 |
| <i>Sherry L. Hunt, Kem C. Kadavy</i> | |
| Urbanization Impacts on Watershed Dams' Function and Rehabilitation | 1657 |
| <i>Aaron Peter</i> | |
| Modeling of Preferential Ice Accumulation and Soil Moisture Movement due to Differential Surface Insulation | 1665 |
| <i>Ronnie Daanen, Debasmita Misra, Rinu Ann Samuel</i> | |
| Measuring Success of a TMDL Implementation Plan..... | 1677 |
| <i>P. L. Barnes, T. D. Keane, J. C. Neel, D. L. Devlin</i> | |
| Merged Rainfall Fields for Continuous Simulation Modelling..... | 1688 |
| <i>M.S. Frezghi, J.C. Smithers</i> | |
| Animal and Irrigation Water Use in Pennsylvania | 1702 |
| <i>A. R. Jarrett, Kurt Skees</i> | |
| Multi-Scale Modeling of Bacterial Bioremediation | 1714 |
| <i>Jennifer Mathieu, Marc Colosimo, James Dunyak, Meriah Arias-Thode</i> | |
| Determination of Constants of a Two-leaf Multi-scale Photosynthesis Model Using a Genetic Algorithm | 1727 |
| <i>Glen Menezes, Luis Rodriguez</i> | |
| Watershed Response Modeling in Arkansas Priority Watersheds: Experience with SWAT autocalibration..... | 1739 |
| <i>M. W. Gitau, R. Srivastava, I. Chaubey</i> | |
| Developmental Strategies for a Server Based Hydrologic Model and Flood Forecasting System for Kentucky, USA | 1750 |
| <i>Bakkiyalakshmi Palanisamy, Steve Workman</i> | |
| SWAT Revisions for Simulating Landscape Components and Buffer Systems | 1762 |
| <i>David Bosch, Jeff Arnold, Martin Volk</i> | |
| Site-Specific Water Quality Trading Ratio Analysis | 1771 |
| <i>Ming-chieh Lee, Kyle R. Mankin</i> | |
| Determination of Lateral Effects of Borrow Pits on Hydrology of Adjacent Wetlands | 1785 |
| <i>B.D. Phillips, R.W. Skaggs, G.M. Chescheir</i> | |
| Simplified Methods for Determining Drain Spacing and Depth: Input for Eastern United States | 1798 |
| <i>R.W. Skaggs</i> | |
| In-situ Use of Ground Water by Alfalfa | 1812 |
| <i>Peter Shouse</i> | |
| Land Drainage with Evaporation Drainage Method..... | 1823 |
| <i>Abu-Zreig, Majed</i> | |
| Adjustment of Infiltration Curve I: Through Different Empiric Models | 1831 |
| <i>Antonio R. S. Andrade, Francisco J. R. da Paixão, Carlos A. V. de Azevedo, Narcélio de Mattos Brito Góes, Vera Antunes Lima, Ticiana Leite Costa</i> | |

| | |
|---|------|
| SDI Installation for Evaluating of Crop Row Direction and Lateral Offset Distance..... | 1838 |
| James P. Bordovsky | |
| Precision Fertilization Using Sub-surface Drip Irrigation (SDI) for Site-specific Management of Cotton..... | 1849 |
| Mark Dougherty, John Fulton, Charlie Burmester, Larry Curtis, Dale Monks | |
| Drip Irrigation of Corn in Northeast Arkansas | 1861 |
| Earl D. Vories, Robert E. Glover, Shawn W. Lancaster | |
| Wetting Patterns and Water Distributions in Layered Soils from a Surface Point Source | 1869 |
| Jiusheng Li, Hongyan Ji, Yuchun Liu | |
| Field Evaluation of Dual Frequency Multi-sensor Capacitance Probes for Water and Nutrient Management in Drip Irrigation..... | 1884 |
| Ian McCann, James Starr | |
| Effect of Emitter Clogging on Microirrigation Schedule..... | 1895 |
| T. Yamamoto, B.A. Ould Ahmed, A.H. Ravolonantenaina Andry, S. Tanaka | |
| Channel Stabilization, Habitat Restoration, and Realignment Feasibility Study for Class I Trout Stream in Wisconsin..... | 1903 |
| D.M. Hazell | |
| Stream Barbs in Low-Gradient Streams | 1929 |
| S. M. M. Jacobsen, S. A. Smith | |
| Evaluating SWAT Model Prediction Uncertainty Using Non-parametric Method..... | 1939 |
| Kyung H. Yoo, Yaoqi Zhang, Sun Joo Kim | |
| Conducting Multi-site Calibrations for Watershed Models..... | 1954 |
| Kati W. Migliaccio, Indrajeet Chaubey | |
| Comparison of Four Water Quality Models (STEPL, PLOAD, AVSWAT-X and WARMF) in Simulating Nutrient Dynamics in a Watershed..... | 1960 |
| Amir P. Nejadhashemi, Kyle R. Mankin | |
| Inverse Calibration of VFSMOD Using the Global Multilevel Coordinate Search/Nelder-mead Simplex Algorithm | 1986 |
| A. R. Ritter, R. Muñoz-Carpena, O. Perez-Ovilla | |
| KamelSoil®: a Model for Soil Characterization from Basic Soil Textural Properties | 1996 |
| Erik Braudeau, Rabi H. Mohtar, Matthieu Ronin, Majdi Abou Najm, Mohamad Salahat, Carly Day, Joseph Mallory, Adam Conklin | |
| Characterizing Crack Behavior in Ppedostructure | 2010 |
| Majdi Abou Najm, Rabi H. Mohtar, Jason Weiss, Erik Braudeau | |
| Prediction and Validation of Hydraulic Conductivity of Compacted Soil Liners | 2031 |
| Jody P. Kraenzel, Dean Eisenhauer | |
| Application of Geophysical and Spectral Methods in Non-invasive Characterization of Porous Media: A Critical Review | 2051 |
| Bhaskar Sahoo, Ronald Daanen, Debasmita Misra, Gregory Newby | |
| Development and Evaluation of Functional Soil Mapping Unit Using Ppedostructure Hierarchy Concept..... | 2064 |
| Mohammed A. Salahat, Rabi H. Mohtar, Erik Braudeau, Darrell Sculze, Majdi Abou Najm | |
| Annual Evapotranspiration of a Forested Wetland Watershed, SC..... | 2088 |
| D.M. Amatya, C. C. Trettin | |
| A Monitoring of Water Quantity and Quality from a Mixed Forest in Korea | 2105 |
| Kyoung-Jae Lim, Min-Hwan Shin, Woong-Ki Kim | |

| | |
|--|------|
| Variability in Runoff and Erosion from Small Forested Watersheds..... | 2116 |
| <i>William J. Elliot, Brandon D. Glaza</i> | |
| Application and Effectiveness of Forestry Best Management Practices in West Virginia | 2128 |
| <i>William Goff, Jingxin Wang</i> | |
| Evidence of Runoff Production Mechanisms in Low Gradient Coastal Forested Watersheds..... | 2149 |
| <i>Thoam M. Williams</i> | |
| Comparison of Rainfall Energy and Soil Erosion Parameters from a Rainfall Simulator and Natural Rain..... | 2162 |
| <i>W. T. Gilmore, N.I. Fox, A.L. Thompson</i> | |
| Development of Shallow Overland Sediment Transport Capacity Model..... | 2185 |
| <i>T. M. Sohrabi, B. T. Guy, R. P. Rudra, W. T. Dickinson</i> | |

VOLUME IV

| | |
|---|------|
| Evaluating Shallow Overland Flow Sediment Transport Capacity Model..... | 2202 |
| <i>P. R. Rudra, B. T. Guy, W. T. Dickinson, T. M. Sohrabi</i> | |
| Erosion of Noncohesive Sediment by Groundwater Seepage: Experiments and Numerical Modeling..... | 2221 |
| <i>Garey Fox, Maria Chu-Agor, Onur Akay, Leili Gordji</i> | |
| Effect of Tillage Methods on Soil Physical Properties and Moisture Content of Latosol | 2233 |
| <i>Xiwen Luo, Yang Zang, Haiqin Wang, Jun Li</i> | |
| Design of Large Wood Structures in Sand-Bed Streams | 2242 |
| <i>Rebecca Ward, Glenn Brown, Paul Weckler, Darrel Temple, F. Douglas Shields Jr., Carlos Alonso</i> | |
| Effectiveness of BMPs in Reducing Pollutant Losses from a Northwest Arkansas Agricultural Watershed..... | 2255 |
| <i>M. W. Gitau, I. Chaubey, R. Srivastava, M.A. Nelson</i> | |
| Water Productivity: A New Concept for Improving Irrigation Water Use Efficiency..... | 2265 |
| <i>Musa N. Nimah, Soraya Moukarzel</i> | |
| Site Specific Water and Nutrient Application by Wireless Valve Controller Network | 2278 |
| <i>Robert W. Coates, Michael J. Delwiche, Richard Y. Evans, Loren R. Oki, Patrick H. Brown</i> | |
| Evaluation of Closed-loop Irrigation Control with Wireless Sensor Network | 2289 |
| <i>Robert G. Evans, Yunseop Kim, William M. Iversen</i> | |
| Variable-Rate Contour-Controlled Sprinklers for High Uniformity Precision Irrigation..... | 2304 |
| <i>Han Wenting; Wu Pute; Feng Hao; Yang Qing</i> | |
| Summary of Smart Water Application Technology Research in Florida | 2310 |
| <i>Michael D. Dukes, Melissa Haley, Bernardo Cardenas-Lailhacar, Mary Shedd, Stacia Davis</i> | |
| Evaluation of Sensor Based Residential Irrigation Water Application..... | 2325 |
| <i>Melissa B. Haley, Michael D. Dukes, Grady L. Miller</i> | |
| An On-line Advisory Service for Optimum Irrigation Management..... | 2336 |
| <i>Carole Abourashed, Charles Hillyer, Chadi Sayde, Marshall English, John Busch</i> | |

| | |
|--|-------------|
| Tools That a NRCS Field Office Might Use to Help a Farmer in the Edwards Aquifer Area in South Texas..... | 2349 |
| <i>J.P. Whan</i> | |
| Updating Soil Surface Conditions During Wind Erosion Events using the Wind Erosion Prediction System (WEPS) | 2357 |
| <i>L. J. Hagen</i> | |
| Introduction to the Wind Erosion Prediction System | 2383 |
| <i>John Tatarko</i> | |
| Effect of Previous Season Cover Crop on the Soil Moisture Distribution and Crop Yield in the Susequent Season..... | 2391 |
| <i>F. C. Kahimba, R. Sri Ranjan, J. Froese, M. Entz</i> | |
| Simulating Accumulation and Melt of Snow for RUSLE2 Databases..... | 2403 |
| <i>D. K. McCool</i> | |
| Assessment of Riparian Buffers for Protecting Streams from Small and Large Scale Agricultural Developments in Kenya..... | 2421 |
| <i>H. Ssegane, E.W. Tollner</i> | |
| Linking Sediment with Biological Impairment in Virginia..... | 2435 |
| <i>G. Yagow, B. Benham</i> | |
| Bioretention Cell Design and Construction | 2447 |
| <i>Rebecca A. Chavez, Glenn O. Brown, Daniel E. Storm</i> | |
| Nitrate Content Prediction in Soil Using TDR Bulk Electrical Conductivity, Water Content, and Bulk Density Data | 2454 |
| <i>M. Krishnapillai, R. Sri Ranjan</i> | |
| Uncertainty in Predicted Instream Bacteria Concentration for TMDL Development using HSPF: Two-Phase Monte Carlo Approach..... | 2464 |
| <i>Anurag Mishra, Brian L. Benham</i> | |
| Sensitivity Analysis of SWAT/Microbial Sub-model 2005 for Fecal Coliform Bacteria Prediction on a Watershed Scale | 2481 |
| <i>P. B. Parajuli, K. R. Mankin, P. L. Barnes</i> | |
| An Evaluation of the NY NRCS Pathogen Management Interim Standard..... | 2505 |
| <i>Peter Wright, Bill Reck, Larry Geohring, Susan Stehman</i> | |
| Evaluation of Sprinkler Irrigation Uniformity by Double Interpolation..... | 2518 |
| <i>Han Wenting, Feng Hao, Wu Pute, Yang Qing</i> | |
| Long Term Response of Corn to Limited Irrigation and Crop Rotations..... | 2525 |
| <i>N.L. Klocke, J.O. Payreo, J.P. Schneekloth</i> | |
| Tillage and Irrigation Capacity Effects on Corn Production..... | 2537 |
| <i>Freddie R Lamm, Robert M. Aiken</i> | |
| Water Requirements of Irrigated Garlic | 2553 |
| <i>Thomas Trout</i> | |
| A Review of Center Pivot Pipeline Solutions for Various Water Qualities..... | 2564 |
| <i>J.L. LaRue</i> | |
| Application of Flow Duration Curves for an Urbanized Stream..... | 2570 |
| <i>No Author Given</i> | |
| Evaluating Actual Evapotranspiration for Different Land Uses with a Distributed Watershed Model and the FAO56 Penman-Monteith Method..... | 2582 |
| <i>L. O. Lagos, D. Martin, S. Irmak, X. Zhou</i> | |
| One Step Estimation of Corn Evapotranspiration in South Central Nebraska..... | 2604 |
| <i>D. Mutiibwa, S. Irmak, D. Martin, A. Irmak, D. Eisenhauer, T. Arkebauer</i> | |

| | |
|---|------|
| Hydrological Fluxes of a Crest Laurel Subtropical Forest in the Garajonay National Park | 2628 |
| <i>A. Ritter, C. Regalado</i> | |
| Effects of Chemical, Microwave and Pulsed Electric Pre-Treatments on Convective Drying of Grapes..... | 2641 |
| <i>No Author Given</i> | |
| Physical Properties of Egg White after In-Shell Pasteurization by using Microwave or by Immersion in Hot Water | 2651 |
| <i>R. Dev, V. Orsat, Y. Gariepy, G. Raghavan, C. Ruiz-Feria</i> | |
| Scaling up the SWAT Model from Goodwater Creek Experimental Watershed to the Long Branch Watershed | 2663 |
| <i>F. Ghidley, E. Sadler, R. Lerch, C. Baffaut</i> | |
| Oxidative Stability, Texture and Color of Roasted Peanuts after Sonication and Edible Coating | 2674 |
| <i>P. Wambura, W. Yang, Y. Wang</i> | |
| Physiological Study of Pre- and Postharvest-treated Lisbon Lemon during Storage..... | 2690 |
| <i>M. Soleimani, L. Tabil, G. Dabbagh</i> | |
| Effects of Rootstock and Postharvest Treatments on Quality of Grapefruit Cultivars during Storage | 2699 |
| <i>M. Soleimani, L. Tabil, A. Mirmajidi, A. Shafieezargar</i> | |
| Increase Conversion Rate of High Tannin Sorghum to Ethanol through Germination | 2710 |
| <i>S. Yan, X. Wu, P. Seib, F. MacRitchie, D. Wang</i> | |
| Ultrasonic Enhanced Liquefaction and Saccharification of Corn for Bio-Fuel Production | 2721 |
| <i>S. Khanal, M. Montalbo, J. Van Leeuwen, G. Srinivasan</i> | |
| Near-Infrared Hyperspectral Imaging to Differentiate Wheat Classes | 2735 |
| <i>S. Mahesh, A. Manickavasagan, D. Jayas, J. Paliwal, N. White</i> | |
| Multisensor Data Fusion of Remotely Sensed Imagery and Ground Sampling for Insect Damage Mapping | 2748 |
| <i>Y. Lan, Y. Huang</i> | |
| Effect of Genetic Algorithm Operators on Convergence of Function Optimum | 2763 |
| <i>T.J. Shankar, S. Sokhansanj S. Bandyopadhyay</i> | |
| Distributed Architecture for Virtual Reality Simulation of Off-Road | 2773 |
| <i>M. Karkee, B. L. Steward, S. A. Aziz, J. A. Bossard II</i> | |
| Visualized Modeling of Three-dimensional Soybean Root Systems Growth | 2791 |
| <i>Qin Qin</i> | |
| Sensitivity Analysis of the Structural Fumigation Process of Flour Mills Using Computational Fluid Dynamics (CFD) Models | 2796 |
| <i>Watcharapol Chayaprasert, Dirk E. Maier, Klein E. Ileleji, Jayathi Y. Murthy</i> | |
| Simulation of Potato Gas Exchange with SPUDSIM | 2806 |
| <i>D.H. Fleisher, D.J. Timlin, Y. Yang, V.R. Reddy</i> | |
| Analysis of Fruiter Leaf Area Index and Biomass Based on Virtual Plant Technology | 2818 |
| <i>Tiansheng Hong, Weibin Wu, Zhen Li, Wenzhao Zhang</i> | |
| Man-made Fruiter Modeling and Application..... | 2826 |
| <i>Weibin Wu, Tiansheng Hong, Zhen Li, Wenzhao Zhang</i> | |

| | |
|---|------|
| Modeling and Validation of an Unusual Kinetic Phenomenon During the Enzymatic Hydrolysis of Lactose to Glucose | 2835 |
| <i>Michael J. Teruel, Daniel M. Jenkins, Jose Reyes</i> | |
| Analysis and Application of Support Vector Machine Based Simulation for Runoff and Sediment Yield | 2846 |
| <i>Thomas Oommen, Debasmita Misra, Avinash Agarwal, S.K. Mishra</i> | |
| A Multi-Objective Compatible Control (MOCC) Algorithm for the Greenhouse Energy-Saving Control | 2859 |
| <i>Qingsong Hu, Erik D. Goodman</i> | |
| Multispectral Imaging for Green Citrus Identification..... | 2872 |
| <i>T.F. Burks, A.W. Schumann, W.S. Lee</i> | |
| Estimating Quality of Canola Seed Using a Flatbed Scanner | 2883 |
| <i>Carol L. Jones, Ryan Stricklin</i> | |
| Thermal-Visual Imaging System for Real Time Plant Water Stress Diagnosis and Monitoring in Sunagoke Moss | 2893 |
| <i>S.Ondimu, M. Haruhiko</i> | |
| Identifying Pecan Weevil through Image Processing Techniques Based on Template Matching..... | 2909 |
| <i>S. Ashaghathra, P. Weckler, A. Wayadande, J. Solie</i> | |
| Autonomous Aerial Image Georeferencing Using Low-cost GPS/Inertial Attitude Heading Reference System (AHRS) | 2923 |
| <i>Haitao Xiang, Lei Tian</i> | |

VOLUME V

| | |
|--|------|
| Method of Object Identification and Leaf Area Calculation in Multi-leaf Scanned Image | 2951 |
| <i>Z. Li, T. Hong, W. Wu, M. Liu</i> | |
| Effective Spatial Resolution for Weed Detection in Crop Images | 2962 |
| <i>S. K. Mathanker, P. R. Weckler, R. K. Taylor</i> | |
| Citrus Yield Mapping and Fruit Quality Inspection System on a Shake and Catch Harvester..... | 2971 |
| <i>Radhaabazar Chinchuluun, Won Suk Lee, Thomas Burks</i> | |
| A Knowledge-Based Segmentation Algorithm for CT Images of Plant Root in Situ..... | 2984 |
| <i>Zhou Xuecheng</i> | |
| Automatic Detection of Dairy Cattle Gait by Vision | 2994 |
| <i>Xiangyu Song, Erik Vranken, Willem Maertens, Bart Sonck, Daniel Berckmans</i> | |
| Principal Components-Artificial Neural Networks for Predicting SSC and Firmness of Fruits based on Near Infrared Spectroscopy | 3004 |
| <i>Xiaping Fu, Yibin Ying</i> | |
| Monte Carlo Simulation of Light Distribution Inside the Apple Fruit | 3015 |
| <i>Jianwei Qin, Renfu Lu</i> | |
| Improving Grain Breeding Programs Through NIR-based Single-kernel Sorting..... | 3029 |
| <i>Elizabeth Bonifacio-Maghirang</i> | |
| A Simple Hybrid Circuit for Direct Determination of Fluorescence Lifetimes..... | 3041 |
| <i>Daniel M. Jenkins, Chaopin Zhu, Wei-Wen Su</i> | |

| | |
|---|------|
| Evaluation of Goose Down and Duck's Down's Content by NIR Method | 3053 |
| <i>Ying Zhou, Yibin Ying</i> | |
| Study on Linear Appraisal of Dairy Cow's Conformation Based on Image Processing | 3064 |
| <i>D. Qian</i> | |
| Thermal and Visible Imaging to Monitor a Cooking Process | 3072 |
| <i>John Stewart, Doug Britton, Michael Matthews, James Lentini</i> | |
| Determination of Rice Seed Vigor Using Digital Image Processing Technology..... | 3081 |
| <i>Huaxian Zhang, Yibin Ying</i> | |
| 3D Surface Reconstruction and Analysis of apple Near-Infrared data for the application of apple stem-end/calyx identification..... | 3088 |
| <i>Bin Zhu, Lu Jiang, Yang Tao</i> | |
| Performance Assessment of Wireless Sensor Networks in Agricultural Settings | 3102 |
| <i>P. Andrade, F. J. Pirce, T. V. Elliot</i> | |
| Results of Wireless Sensor Network Transceiver Testing for Agricultural Applications..... | 3112 |
| <i>Martin A. Hebel, Dr. Dennis G. Watson, Ralph Tate</i> | |
| A Trusting Sensor Networks for Water Quality Supervising based on Sink | 3122 |
| <i>Xiao De-qin, Luo Xi-wen, Li Jiu-hao</i> | |
| Multispectral Imaging System for Online Poultry Contaminant Inspection | 3130 |
| <i>Michio Kise, Bosoon Park, Kurt C. Lawrence, William R. Windham</i> | |
| Independent Component Analysis Based Band Selection for Black Walnut Shell and Meat Classification in Hyperspectral Fluorescence Imagery | 3138 |
| <i>Lu Jiang, Bin Zhu, Xiuqin Rao, Gerald Berney, Yang Tao</i> | |
| Black Walnut Shell and Meat Discrimination using Hyperspectral Fluorescence Imaging | 3149 |
| <i>Lu Jiang, Bin Zhu, Hansong Jing, Xin Chen, Xiuqin Rao, Gerald Berney, Yang Tao</i> | |
| Identification and Detection for Surface Cracks of Corn Kernel Based on Computer Vision | 3163 |
| <i>Junxiong Zhang, Yi Xun, Wei Li</i> | |
| A Porphyrin-based Electronic Nose System for Meat Safety..... | 3171 |
| <i>S. Panigrahi, Amamcharla Jayendra</i> | |
| Dielectric Spectroscopy Studies on Honeydew Melons | 3189 |
| <i>Wenchuan Guo, Stuart O. Nelson, Samir Trabelsi</i> | |
| Dielectric Study of Water Binding in Grain and Seed | 3201 |
| <i>Samir Trabelsi, Stuart O. Nelson</i> | |
| Dielectric Spectroscopy of Fresh Chicken Breast Meat | 3209 |
| <i>Stuart O. Nelson, Samir Trabelsi, Hong Zhuang</i> | |
| Radar Mapping of the Agricultural Landforms Impacted by the New Madrid Earthquakes of 1811-12 | 3217 |
| <i>R. S. Freeland, J. T. Ammons</i> | |
| An Automatic Headspace Sampling System for Meat Safety..... | 3228 |
| <i>Lav Khot, Suranjan Panigrahi</i> | |
| Development of an Intelligent Quality Control Model Based on Speaking Plant Approach for Moss Greening Product..... | 3241 |
| <i>Mirwan Ushada, Haruhiko Murase</i> | |
| The Development of Intelligent Equipments about Precision Agriculture | 3253 |
| <i>Zhang Xiaochao</i> | |

| | |
|--|------|
| Automatic Detection of Black Pulp Mango in a Sorting System..... | 3262 |
| <i>F.F. Hahn</i> | |
| An End-effector and Manipulator Control for Tomato Cluster Harvesting Robot..... | 3269 |
| <i>Naoshi Kondo, Koichi Tanihara, Kohki Yata, Shigemune Taniwaki, Mitsuji Monta, Mitsutaka Kurita, Mitsuyoshi Tsutsumi</i> | |
| Study on Farming Information Acquisition Technique for Precision Agriculture | 3284 |
| <i>Z. Zhou</i> | |
| Automatic Detection of Growing Orange Fruits by Machine Vision..... | 3293 |
| <i>Z. Li, T. Hong, W. Wang, S. Song</i> | |
| Study on Fruit Visibility for Robotic Fruit Harvesting..... | 3302 |
| <i>D. M. Bulanon, T. F. Burks</i> | |
| A Real-time Machine Vision Algorithm for Robotic Citrus Harvesting | 3314 |
| <i>M.W. Hannan, T.F. Burks, D.M. Bulanon, V. Alchanatis</i> | |
| Stereo Perception System Design for Off-road Vehicles Automation | 3326 |
| <i>Francisco Rovira-Más, Qi Wang, Qin Zhang</i> | |
| Development of a Korean Rural Information Support System, Integrated Database Design for Rural Data Information in South Korea..... | 3337 |
| <i>K. Suh, J. Lee, T. Kim, S. Yoon, J. Lee</i> | |
| On-Line Hyperspectral Transmittance Imaging for Internal Defect Detection of Pickling Cucumbers..... | 3349 |
| <i>D. Ariana, R. Lu</i> | |
| Evaluation of Nanostructured Novel Sensing Material for Food Contamination Applications..... | 3357 |
| <i>S. Sankaran, S. Panigrahi, Y. Chang</i> | |
| Dust Wind Tunnel Testing of Low Volume Louvered Dichotomous PM10 Inlet..... | 3371 |
| <i>J. Chen, B. W. Shaw</i> | |
| Changes in VOCs Emissions from Fecal Manure Throughout the Life Cycle of Beef Cattle | 3383 |
| <i>Y. Laor, A. Shabtay, U. Ravid, R. Baybikov, H. Eitam</i> | |
| Estimating Ammonia and Methane Emissions from CAFOs Using an Open-path Optical Remote Sensing Technology | 3393 |
| <i>Kyoung S. Ro, Patrick G. Hunt, Melvin Johnson</i> | |
| An Innovative Wind Tunnel for Evaluating Gaseous Emissions from Agricultural Land Or Liquid Surfaces | 3401 |
| <i>S.B. Shah, T.K. Marshall, P.W. Westerman, R.D. Munilla, E.P. Harris</i> | |
| Comparison of Partial Reactive Organic Gases (ROG) Emission Factors in a Dairy and Cattle Feedlot..... | 3411 |
| <i>Froilan Ludana Aquino, Sergio C. Capareda, Ronald E. Lacey, Saquib Mukhtar, Bryan Shaw, Calvin B. Parnell, Jr., Gary Riskowski</i> | |
| Evaluating Energy Savings Strategies Using Heat Pumps and Energy Storage for Greenhouses | 3432 |
| <i>A.J. Both, Dave Mears, Tom Manning, Eugene Reiss</i> | |
| Greenhouse Water Recovery System toward Water and Energy Saving Crop Production in Semi-Arid Climate..... | 3448 |
| <i>W. Lovichit, C. Kubota, C. Choi, J. Schoonderbeek</i> | |
| Water Use by Greenhouse Evaporative Cooling Systems in a Semi-Arid Climate..... | 3461 |
| <i>Gene Giacomelli, Chieri Kubota</i> | |
| Design Considerations of a Whole Plant Photosynthesis Measurement System | 3472 |
| <i>Noriko Takahashi, Peter Ling</i> | |

| | |
|--|------|
| Effects of low Pre-Night Temperature on Microclimate, Fruit Yield and Quality of Greenhouse Tomatoes Grown on a Raised-Trough Production System..... | 3483 |
| <i>X. Hao, M.S. Borhan, J. Zheng</i> | |
| Evapotranspiration Rate Measurement by Energy-Balance Equation in a Single-span Greenhouse..... | 3503 |
| <i>T. Takakura, C. Kubota, S. Sase, M. Hayashi, M. Ishii, K. Takayama, H. Nishina, K. Kurata, G.A. Giacomelli</i> | |
| Vibration Characteristics of Hopper-type Feed Distributor for Multi-tier Vertical Layer Batteries | 3512 |
| <i>D. I. Chang, S. J. Lee, J. K. So, H. H. Chang, T.J. Yoon</i> | |
| The Alternative Village – Research and Demonstration in a Unique Campus Setting | 3525 |
| <i>Kris J. Dick, M. G. Britton</i> | |
| Distribution of Fines during Percolation Segregation for Varying Particle Bed Depths | 3533 |
| <i>Jaskaran S. Gill, Anjani K. Jha, Virendra M. Puri</i> | |
| Percolation Segregation of Multi-Size Particulate Mixtures | 3545 |
| <i>A. K. Jha., J. S. Gill, V. M. Puri</i> | |
| Mechanical Behavior of Powder Constituents and Their Mixtures – an Experimental Study..... | 3556 |
| <i>A. Pandeya, H. Yi, V. M. Puri</i> | |
| Experimental Study of Shallow Die Filling | 3568 |
| <i>Saad Sayyar Roudsari, V. M. Puri</i> | |
| Determination of Plastic and Time-dependent Properties of Bulk Solids Using Cubical Triaxial Tester at Low Pressure Range..... | 3584 |
| <i>Hojae Yi, Anuranjan Pandeya, Virendra M. Puri</i> | |
| A Numerical Model for Predicting Arch Destruction by Vibration in Hoppers | 3594 |
| <i>X. Cheng</i> | |
| Evaluation of the Biodegradation Rate of Animal Carcasses in Passively Aerated Bio-secure Composting System..... | 3604 |
| <i>H.K. Ahn, T.D. Glanville, J.A. Koziel, N. Akdeniz</i> | |
| Performance Evaluation of a Biosecure Composting System for Emergency Disposal of Swine Mortalities | 3613 |
| <i>TD Glanville, HK Ahn, D.L. Reynolds, J. Koziel, S. Akinc, N. Akdeniz</i> | |
| Qualitative Characterization of Volatile Compound Emissions During Biological Decomposition of Plant Materials with Solid-Phase Microextraction and Gas Chromatography – Mass Spectrometry..... | 3623 |
| <i>Neslihan Akdeniz, Jacek A. Koziel, Hee-Kwon Ahn, Thomas D. Glanville</i> | |
| Membrane Filtration of Untreated Vs Anaerobically Digested Swine Manure..... | 3636 |
| <i>Fleming, Ron, MacAlpine, Malcolm</i> | |
| Adjusting N:p Ratios in Liquid Dairy Manure Through Nitrification and Chemical Phosphorus Removal to Match Crop Fertilizer Requirements | 3647 |
| <i>J. DeBusk, J. Arogo, N. Love, K.F. Knowlton</i> | |
| On-farm Renewable Energy Projects for Greenhouse Gas Mitigation | 3659 |
| <i>Carlos M. Monreal, Naveen K. Patni, Jody Barclay</i> | |
| Development of a Surface Aeration System to Control Odor from Liquid Manure Storage Facilities | 3667 |
| <i>Jun Zhu, Curt Miller, Chunying Dong, Xiao Wu, Liang Wang, Saqib Muhktar</i> | |

| | |
|--|------|
| Denitrification Enzyme Activity in Swine Wastewater Lagoons | 3678 |
| <i>P.G. Hunt, T.A. Matheny, K.S. Ro, M.B. Vanotti, G.B. Reddy</i> | |

VOLUME VI

| | |
|---|------|
| Greenhouse Gas Emissions from Constructed Wetlands Treating Swine Wastewater | 3683 |
| <i>Patrick G. Hunt, Melvin Johnson, T. A. Matheny, G. B. Reddy</i> | |
| Plowing Following Land Application of Manure Significantly Reduces Nutrient Transport | 3692 |
| <i>J. E. Gilley, B. Eghball, D. B. Marx</i> | |
| Using Poultry Litter to Fertilize Longleaf Pine Plantations for Enhanced Straw Production | 3706 |
| <i>J.P. Chastain, P.A. Rollins, M. Reitz</i> | |
| Computational Fluid Dynamics (CFD) modeling to predict bioaerosol transport behavior during center pivot wastewater irrigation | 3723 |
| <i>Minyoung Kim, Jennifer Frohner, Lawrence J. Hagen, Jeanette Thurston-Enriquez</i> | |
| Adding Value to the Poultry Litter using Fractionation, Pyrolysis, and Pelleting..... | 3732 |
| <i>K. Singh, J. W. Worley, L. M. Risse, K. C. Das, S. Thompson</i> | |
| GIS-Based Decision Support System for Poultry Broiler Litter Management | 3745 |
| <i>Puneet Srivastava, John Fulton, Ted Tyson, Frank Owsley, Kyung H. Yoo</i> | |
| Investigation of Economically Viable Coproducts Developed from Ash from the Combustion of Manure | 3756 |
| <i>Anthony J. Megel, Bob DeOtte, John Sweeten, Clay Robinson, Bob Stewart, David Parker, Marty Rhoades</i> | |
| Environmental and Economic Comparisons of Manure Application Methods on Dairy Farms | 3770 |
| <i>A. Rotz, P. Kleinman, C. Dell, J. Schmidt, D. Beegle</i> | |
| Comparing Soil and Pond Ash Feedlot Pen Surfaces for Environmental Management | 3785 |
| <i>B.L. Woodbury, J.A. Nienaber, R. A. Eigenberg</i> | |
| Alternative Technology Systems for Open Feedlot Runoff..... | 3795 |
| <i>Stewart W. Melvin, Jeffery C. Lorimor, Jerry L. Wille</i> | |
| Modeling Alternative Treatments Systems for CAFOs in Kansas | 3804 |
| <i>Tolle, S.M., J.K. Koelliker, K.R. Mankin, J.P. Harner</i> | |
| Quality and Quantity of Leachate in Land Application Systems | 3820 |
| <i>R. Duan, C.B. Fedler, C.J. Green, C. Sheppard</i> | |
| Temporal Changes in Nutrient Transport Following Land Application of Manure | 3836 |
| <i>B. Eghball, D. B. Marx</i> | |
| Precision Animal Management of Livestock Stress Model - Verification | 3861 |
| <i>Tami M. Brown-Brandl, David D. Jones</i> | |
| Estimated Cattle Heat Stress Under Various Shade Material Based on Instrumented Data..... | 3875 |
| <i>T.M. Brown-Brandl, J.A. Nienaber</i> | |
| Sweating Rate of Dairy Cows under Shade and Sunny Environments..... | 3885 |
| <i>K.G. Gebremedhin, P.E. Hillman, C.N. Lee, R. Collier</i> | |

| | |
|---|------|
| Summer Heat Waves--Extreme Years | 3904 |
| <i>Leroy G. Hahn, Tami M. Brown-Brandl, Roger A. Eigenberg</i> | |
| Influence of Spatial Constraints and Environment Within the Farrowing-pen Creep-area on Neonatal Pig Resting Behavior | 3927 |
| <i>Eileen F. Wheeler, Knut E. Boe</i> | |
| Development of a Measurement System for Swine Microenvironment during Transportation..... | 3946 |
| <i>A.C. Lenkaitis, X. Wang, T.L. Funk, M. Ellis</i> | |
| Production of Vibrations in the Facilities of Layer Houses and Its Effect on Productivity of Layers | 3959 |
| <i>D. I. Chang, S. J. Lee, H. H. Chang, T. J. Yoon, J. K. So</i> | |
| Investigation of Ammonia Volatilization from Broiler Litter: a Statistical Model | 3970 |
| <i>Zifei Liu, Lingjuan Wang, David Beasley</i> | |
| Swine Production Impact on Ambient Gas, Odor and Bio-aerosol Concentrations in Agricultural Areas..... | 3984 |
| <i>S.P. Lemay, S. Godbout, F. Pelletier, C. Duchaine, J.P. Larouche, M. Belzile, A. Marquis.</i> | |
| Greenhouse Gas Emissions from Dairy Farms | 4005 |
| <i>D. Sedorovich, A. Rotz</i> | |
| Odour Emissions Following Hog Slurry Application to Grassland | 4019 |
| <i>M. Mkhabela, R. Gordon, A. Madani, D. Burton</i> | |
| Development of an Odour Emission Model from Areal Surfaces | 4031 |
| <i>Wenyue Wu, Qiang Zhang</i> | |
| Determining the Optimal Location for Sampler Placement to Determine Emission Factors from a Ground Level Area Source | 4043 |
| <i>William B. Faulkner, Jennifer M. Lange, Jacob J. Powell, Bryan W. Shaw, Calvin B. Parnell</i> | |
| Development of an Almond Harvest Emission Factor | 4056 |
| <i>S. Capareda, J. Powell, L. Barry Goodrich, Charles Krauter, Matt Beene</i> | |
| Effect of Water Sprinkler Use on Downwind PM10 Mass Concentration at a Beef Cattle Feedlot in Kansas | 4069 |
| <i>E. Razote, R. Maghirang, J. Murphy, B. Auvermann, D. Oard, J. Sweeten, W. Hargrove</i> | |
| Design and Evaluation of a Simple Uniflow Cyclone with Tangential Inlet | 4086 |
| <i>L. Golshahi, Z. Tan, J. Abedi, R. Hugo</i> | |
| Structural Behavior of Circular Concrete Manure Tanks on Compressible Foundations..... | 4096 |
| <i>Benjamin C. Doerge, William A. Wallace</i> | |
| Design Considerations for the Construction and Operation of Flour Milling Facilities. Part I: Planning, Structural, and Life Safety Considerations | 4105 |
| <i>Gregory D. Williams, Kurt A. Rosentrater</i> | |
| Productive Performance of Broiler Chickens Sheltered at Two High Density Levels in Hangars Provided with Different Positive Ventilation Systems | 4129 |
| <i>Ilda de Fátima Ferreira Tinóco, Marcelo Luz Matos, Cecília de Fátima Souza, Cinara da Cunha Siqueira Carvalho, Keles Regina Antony Inoue, Juliano César de Abreu Severo</i> | |
| Air Quality of Three Types of Commercial Laying Hen Houses | 4135 |
| <i>A. R. Green, H. Xin, D.W. Trampel</i> | |
| Characterization of Thermal Environment and Zootechnic Performance of the Broiler Chickens in Different Semi-acclimatized Facility Systems Under Winter Conditions | 4158 |
| <i>Irene Mengali, Ilda de Fátima Ferreira Tinóco, Fernando da Costa Baêta, Maria Clara Carvalho Magalhães, Keles Regina Antony Inoue, Juliano César de Abreu Severo</i> | |

| | |
|--|------|
| Dairy Barns Cooling: Integrated high pressure fogging system with air ventilation and circulation systems | 4169 |
| No Author Given | |
| Heating Poultry Houses with an Attic Ventilation System..... | 4178 |
| J.L. Purswell, B.D. Lott | |
| Protocol and Techniques to Evaluate Emission Control Technologies from Commercial Animal Production Operations | 4187 |
| Larry D. Jacobson, David R. Schmidt, Brian P. Hetchler | |
| Assessment of In-line Filter Type and Condition on Ammonia Measurement | 4196 |
| Zhu, Z., H. Xin, H. Li, R.T. Burns | |
| Diurnal Variation of Odor and Gas Emission from Swine Buildings | 4211 |
| Y. Wang | |
| Novel Treatment of Livestock Odor and VOCs Using UV Photolysis | 4224 |
| Xiuyan Yang, Jacek A. Koziel, Lingshuang Cai | |
| Effects of Swine Dietary Treatment on Odor and VOCs Emitted from Swine Manure | 4245 |
| Lingshuang Cai, Jacek Koziel, Xiuyan Yang, Brian Kerr, Steven Trabue | |
| Evaluation of Greenhouse Gas Emissions from Two Swine Production Systems Based on a Life Cycle Approach | 4261 |
| F. Pelletier, S. Godbout, S.P. Lemay, S. Pigeon, J.Y. Drolet | |
| Microbial Fuel Cell Operation and Use with Anaerobic Digestion for Power Production from Dairy Manure | 4280 |
| Crystal A. Powers, Ruth E. Richardson, Norm R. Scott | |
| Using Biogas As a Fuel for Trucks and Tractors | 4291 |
| Carl S. Hansen, Conly L. Hansen | |
| Gas Cleaning and Conditioning of Synthesis Gas Produced from a Down-Draft Gasifier | 4299 |
| Chris Akudo, Chandra S. Theegala | |
| Improving Quality and Quantity of Oils Produced from Biomass | 4307 |
| Jason Midgett, Chandra S. Theegala | |
| Wheat and Hazelnut Inspection with Impact Acoustics Time-Frequency Patterns | 4316 |
| N.F. Ince, I. Onaran, A.H. Tewfik, H. Kalkan, T. Pearson, A.E. Cetin, Y. Yardimci | |
| Determination the Principal Stress of the Structure element using TIN | 4326 |
| H. J. Lee, W. Choi, J. J. Lee | |
| Evaluation of Using an Infrared Temperature Sensor for Plant Surface Temperature Based Greenhouse Climate Control | 4335 |
| M.S. Borhan, X. Hao, J. Zheng | |
| Stability Evaluation of Simulated Plant and Animal Composts Utilizing Respiration Rates and VOC Emissions | 4354 |
| Neslihan Akdeniz, Jacek A. Koziel, Hee-Kwon Ahn, Thomas D. Glanville | |
| Potential of Swine Waste As Substratum in Anaerobic Digestion Under Different Temperatures and Hydraulic Retention Times | 4364 |
| Cecília de Fátima Souza, Cláudia Ribeiro dos Santos, Keles Regina Antony Inoue, Ilida de Fátima Ferreira Tinôco, Cinara da Cunha Siqueira Carvalho | |
| The Effect of Solid Separation and Composting on the Energy Content of Swine Manure | 4374 |
| K.B. Cantrell; M.B. Vanotti; P.G. Hunt | |

| | |
|--|------|
| Effects of Housing System Environmental Enrichment on Performance and Carcass Characteristics of Growing-Finishing Pigs | 4384 |
| <i>Lei Xi, Baoming Li, Zhengxiang Shi, Liandi Zhang</i> | |
| Effects of Different Housing Conditions on Health and Welfare of Caged Layers | 4393 |
| <i>A. Geng, B. Li</i> | |
| Animal Welfare Assessment in cattle farms | 4412 |
| <i>Matteo Barbri, Alessandro Gastaldo, Paolo Rossi, Paolo Zappavigna</i> | |

VOLUME VII

| | |
|--|------|
| Productive Performance of RJEA (RHEA Americana) Confined in Growth Phase, in Brazil | 4425 |
| <i>Cecília de Fátima Souza, Waleska Soares Bressan, Keles Regina Antony Inoue, Ilda de Fátima Ferreira Tinôco, Cinara da Cunha Siqueira Carvalho</i> | |
| NM-Manure: A Seasonal Prediction Model of Manure Excretion for Lactating Dairy Cows in New Mexico..... | 4431 |
| <i>V. E. Cabrera, R. Kirksey</i> | |
| Full-scale Sequencing Batch Reactor (SBR) Treatment for Milking Center Wastewater | 4442 |
| <i>Xiao Wu, Jun Zhu</i> | |
| Energy Demand for Milking Dairy Cows..... | 4451 |
| <i>Simone Kraatz, Werner Berg</i> | |
| Electrostatic Space Charge Systems for Dust Reduction in Animal Housing | 4463 |
| <i>No Author Given</i> | |
| Browning Substrates in Agaricus Bisporus | 4476 |
| <i>J. Zhu, X. Wang, Y. Xu, J. Wang</i> | |
| Evaluation of ISC3 and CALPUFF Atmospheric Dispersion Models for Odor Nuisance Prediction..... | 4483 |
| <i>T. Curran, V. Dodd, W. Magette</i> | |
| An Investigation of All-Terrain Vehicle (ATV) Incidents in Rural Nebraska..... | 4495 |
| <i>Bryan J. Smith, William P. Campbell, David L. Morgan</i> | |
| Simulation and Validation of Hydrogen Sulfide Removal from Fan Ventilated Confined-space Manure Storages | 4507 |
| <i>Juan Zhao, Harvey B. Manbeck, Dennis J. Murphy</i> | |
| Does Agricultural Spraying Involve Mental Workload?..... | 4530 |
| <i>A. Dey, Danny D. Mann</i> | |
| Evaluation of the NAGCAT Tractor Guidelines..... | 4541 |
| <i>F. A. Fathallah, J. H. Chang, B. Marlenga, W. Pickett, J. M. Meyers, J. A. Miles</i> | |
| Measurement of Vibration Transmission in the Hand and Arm from Impact and Continuous Vibrating Sources | 4553 |
| <i>D. Brisach, M. Griffith, P. Popper, J. Glancey</i> | |
| Usability Challenges in Agricultural Electronics | 4576 |
| <i>Hannu Haapala Piia Nurkka</i> | |
| Operator Interface for Tractor Rollover Mitigation System..... | 4582 |
| <i>Philip M. Garvey, Dennis J. Murphy, H. Joseph Sommer, Corrie I. Nichol</i> | |
| On-Farm Safety Program | 4594 |
| <i>James Carrabba, Sharon Scofield, John May</i> | |

| | |
|---|------|
| Evaluating the Risks to the Worker's Health and Safety During the Mechanical Drying Process of the Coffee | 4606 |
| <i>Cinara da Cunha Siqueira Carvalho, Flávio Meira Borém, Giovanni Francisco Rabelo, Abner José de Carvalho, Ilda de Fátima Ferreira Tinóco, Wagner da Cunha Siqueira</i> | |
| Review of Safety Strategies According to the Safety Hierarchy | 4613 |
| <i>D.D. Mann</i> | |
| Virginia Agricultural Health and Safety Survey 2006 | 4630 |
| <i>R. D. Grisso, J. V. Perumpral</i> | |
| Strategies for Disseminating Assistive Technology Information to Farmers and Ranchers | 4643 |
| <i>Cliff Racz, W.E. Field</i> | |
| Equipment Marketing: Specification Data Needs for Older Operators and Operators with Disabilities | 4664 |
| <i>R. Schuler, M. Novak</i> | |
| Liability Issues Related to Assistive Technology for Farmers with Disabilities | 4670 |
| <i>R. Schuler, M. Novak</i> | |
| Hydrogen Production from Renewable Alcohols over Pt and Ni Catalysts | 4677 |
| <i>Agus Haryanto</i> | |
| Enhancement of Methane Production by Using Vermicompost As Additive | 4685 |
| <i>B. Zhang, S. Yang, Y. Zhang</i> | |
| Effects of Pulsed Electric Field and Heat on Rheological and Color Properties of Soymilk | 4695 |
| <i>B. Y. Xiang, M. O. Ngadi, T. Gachovska, B. K. Simpson</i> | |
| Protein Denaturation in Whole Milk Treated by Pulsed Electric Field | 4709 |
| <i>B. Y. Xiang, M.O. Ngadi, T. Gachovska, G.S.V. Raghavan</i> | |
| Influence of Pulsed Electric Field Energy on the Degree of Damage in Alfalfa Tissue | 4722 |
| <i>Tanya Kirilova Gachovska, Michael Ngadi, Jeyamkondan Subbiah</i> | |
| Continuous Steam Sterilization of Apple Slices | 4734 |
| <i>No Author Given</i> | |
| Microwave and Microwave-vacuum Drying Kinetics of Field Peas | 4745 |
| <i>A. Opoku, L. Tabil, S. Panigrahi, V. Meda</i> | |
| Bread Type Characterization by Rheological and Mechanical Properties | 4761 |
| <i>Medea Nagy, Aniko Meretei, Andras Fekete</i> | |
| Heating Uniformity and Differential Heating of Insects in Almonds in Radio Frequency Systems | 4771 |
| <i>S. Wang, J. Tang</i> | |
| Moisture Diffusivity and Product Temperature Analysis of Carrot Slices in Microwave Vacuum Rotary Chamber Dryer | 4781 |
| <i>P. P. Sutar, Suresh Prasad</i> | |
| Particle Size Distribution of Desiccated Microspheres of Alginate-pectin Using Dielectric Energy at Low Pressure: Effect of Homogenization | 4793 |
| <i>S. Jaya, T. D. Durance, R. Wang</i> | |
| Numerical Model to Predict Temperature of Fluid Heated in a Continuous Flow Focused Microwave System | 4802 |
| <i>D. A. Salvi, C. M. Sabliov, D. Boldor</i> | |
| Characterization of Pulsed Ultra-Violet Light Treatment by Using Model Systems | 4810 |
| <i>Katherine L. Bialka, Ali Demirci</i> | |

| | |
|---|------|
| Investigation of <i>Staphylococcus aureus</i> inactivation by pulsed UV-light and Infrared heating using micro-spectrometry and Transmission electron microscopy | 4831 |
| <i>Kathiravan Krishnamurthy, Jagdish C. Tewari, Joseph M.K. Irudayaraj, Ali Demirci.</i> | |
| Thermal inactivation of <i>Listeria</i> on fully-cooked and vacuum-packaged chicken breast products during hot water treatment | 4843 |
| <i>Min Li, Abani Pradhan, Lisa Cooney, Yanbin Li</i> | |
| Development of Tracers for Grain Tracing System..... | 4854 |
| <i>Ruixiu Sui, J. Alex Thomasson, Timothy Herrman</i> | |
| Ethanol Productions from Biomass: Comparison of Biodegradation and Biosynthesis Pathways | 4863 |
| <i>Lin Wei, William D. Batchelor, Lester O. Pordesimo</i> | |
| Simultaneous Saccharification and Fermentation of Highly Digestible Variety of Grain Sorghum for Ethanol Production | 4881 |
| <i>Joan Rollog Hernandez, Sergio C. Capareda, William Rooney, Froilan L. Aquino</i> | |
| Effect of Limonene on Ethanol Production by <i>Zymomonas Mobilis</i> | 4890 |
| <i>Mark R. Wilkins</i> | |
| Potentials of TemuloseTM for Ethanol Production | 4898 |
| <i>Froilan L. Aquino, Sergio C. Capareda, Joan Hernandez</i> | |
| Roll Press Briquetting of Corn Stover and Switchgrass: A Pilot Scale Continuous Briquetting Study | 4903 |
| <i>N. Kaliyan, R.V. Morey</i> | |
| Size Reduction of Wet and Dry Biomass by Linear Knife Grid Device | 4936 |
| <i>C. Igathinathane, A.R. Womac, S. Sokhansanj, S. Narayan</i> | |
| Biomass Pre-Processing Size Reduction with Instrumented Mills | 4952 |
| <i>A.R. Womac, C. Igathinathane, P. Miu, S. Sokhansanj, S. Narayan</i> | |
| Modeling and Characterization of Biomass Size Reduction | 4967 |
| <i>Ladan J. Naimi, Shahab Sokhansanj, Tony Bi, Alvin R. Womac, Sudhagar Mani, Mozammel Hoque</i> | |
| Characterization of Poultry Litter for Storage and Process Design | 4983 |
| <i>M. Bernhart, O. O. Fasina, J. Fulton</i> | |
| Economic Analysis of two Receiving Facility Designs for a Bioenergy Plant | 4993 |
| <i>J.S. Cundiff, H. Shapouri, R.D. Grisso</i> | |
| Modeling the Flow Properties of Distillers' Dried Grains using Artificial Neural Networks | 5007 |
| <i>V. Ganesan, K. Muthukumarappan, K. Rosentrater</i> | |
| A New Correlation for Conjugate Nusselt Number Applied to Cooling of Apples | 5026 |
| <i>Marcio Arêdes Martins; Leandro Soares de Oliveira</i> | |
| Quantitative Microbial Risk Assessment Model for Exposure Assessment of <i>Salmonella</i> during Poultry Processing | 5036 |
| <i>Abani Pradhan, Yanbin Li</i> | |
| Physical Characterization of Switchgrass and Wheat Straw | 5049 |
| <i>Pak Sui Lam, Sudhagar Mani, Mozammel Hoque, Ladan Jafari-Naimi, Shahab Sokhansanj, Xiaotao Bi</i> | |
| Physical Properties of Low Oil Distillers Dried Grains with Solubles (DDGS) | 5072 |
| <i>Jessica A. Herr, Kurt A. Rosentrater</i> | |
| Flow Properties of Distillers' Dried Grains with varying Soluble and Moisture Contents using Jenike Shear Tester | 5079 |
| <i>V. Ganesan, K. Rosentrater, K. Muthukumarappan</i> | |

| | |
|--|------|
| Co-Production of Chemicals and Energy from Distillers Grain using Supercritical Fluid Extraction and Thermochemical Conversion Technologies | 5096 |
| <i>Lijun Wang, Ajay Kumar, Curtis L. Weller, David D. Jones, Milford A. Hanna</i> | |
| Potential Bleaching Techniques for use in Distillers Grains..... | 5105 |
| <i>Jessica A. Herr, Kurt A. Rosentrater, Padu G. Krishnan</i> | |
| Water Minimization Protocol for Fruit and Vegetable Processors | 5123 |
| <i>Isis Fernandez-Torres, Steven Safferman, Steven Miller</i> | |
| Anaerobic Digestion Feasibility Protocol for Fruit and Vegetable Processors..... | 5128 |
| <i>Erin Henderson, Steven Safferman, Steven Miller</i> | |
| Thermophilic Anaerobic Digestion of Sugarbeet Processing Residuals..... | 5139 |
| <i>I. Polematidis, A. Koppar, P. C. Pullammanappallil, D. P. Chynoweth, A. A. Teixeira, R. Legrand</i> | |

VOLUME VIII

| | |
|--|------|
| Dielectric Properties of Water Melons and Correlation with Soluble Solids Content..... | 5153 |
| <i>Stuart O. Nelson, Wechuan Guo, Samir Trabelsi, Stanley J. Kays</i> | |
| Effect of Dough Resting Time on the Textural Properties of Raw Asian Noodles..... | 5166 |
| <i>C. Pronyk, S. Cenkowski, W.E. Muir, O.M. Lukow</i> | |
| Determining Quality Factors of Eggs from Microwave Permittivity Measurements..... | 5176 |
| <i>Samir Trabelsi, Wenchuan Guo, Deana Jones, Stuart O. Nelson</i> | |
| Recycling Nutrients from Biofuel Production: Pelletized Gasifier Ash for Fertilizer..... | 5186 |
| <i>K.A. Edwards, R.P. Anex, Y. Bian, D. Myers</i> | |
| Preparation and Partial Characterization of Canola-based Epoxy Resins for Bio-based Plastic Composites | 5193 |
| <i>Judith D. Espinoza-Perez, Dennis P. Wiesenborn, Kristi Tostenson, Chad A. Ulven, Morteza Tatlari</i> | |
| Enrich Arabinoxylan in Corn Fiber for Value-Added Products..... | 5205 |
| <i>Bin Wang, Biao Cheng, Hao Feng</i> | |
| Elucidating the Solid, Liquid and Gaseous Products from Pyrolysis of Cotton Gin | 5215 |
| <i>Froilan Aquino, Sergio Capareda, Joan Hernandez, Jacob Powell</i> | |
| Fluidized Bed Gasification and Pyrolysis of Cotton Gin Trash for Liquid Fuel Production | 5229 |
| <i>Calvin B. Parnell Jr.</i> | |
| The Development of Biomass Pyrolysis in China | 5237 |
| <i>W. Yi, X. Bai, Z. Li, Y. Li, L. Wang</i> | |
| Impact of Impurities on Biodiesel Cold Flow Properties | 5247 |
| <i>Anup Pradhan, Dev Sagar Shrestha</i> | |
| Engineering Soy Biodiesel to Improve Overall Fuel Characteristics and Validation of These Improvements..... | 5256 |
| <i>Paul S. Wang, Jon Van Gerpen, Thomas Clemente</i> | |
| Measurement of Transient Smoke Emissions Characteristics from E-Diesel and Soy-Diesel Fuel Blends in two Commercial Engines | 5267 |
| <i>J.L. Glancey, J. Hummel, S. Nobles, Shane Charpimol</i> | |
| Modeling Biodiesel Combustion Using GT-Power | 5276 |
| <i>Jonathon McCrady, Alan Hansen, Chia-Fon Lee</i> | |

| | |
|--|------|
| Computational Analysis of the Properties of Biodiesel Blended with Diesel Fuels | 5294 |
| <i>Jonathon McCrady, Alan Hansen, Chia-Fon Lee</i> | |
| Improving Grape Juice Yield and Quality Using Flash Vacuum Expansion..... | 5306 |
| <i>S. S. Paranjpe, M. T. Morgan</i> | |
| Glass Transition and Rheological Properties of Aloe Vera (<i>aloe Barbadensis L.</i>) Dried by Different Methods | 5318 |
| <i>J.R. Powers; J. Tang</i> | |
| Dielectric Properties of Chicken Eggs and Their Components | 5327 |
| <i>K. M. Keener</i> | |
| Microwave-assisted Inactivation of Carbohydrases from <i>Aspergillus Niger</i> by Continuous-flow Processing. | 5335 |
| <i>Judith D. Espinoza-Perez, Julio C. Montanez-Saenz, Luz M. Ramos-Ponce, Angel U. Valdez-Peña, Dennis P. Wiesenborn, Juan C. Contreras-Esquivel</i> | |
| Reduction of Fouling During Product Processing Through Surface Modification Using Food-grade Coatings | 5343 |
| <i>S.Balasubramanian, V.M. Puri</i> | |
| Coconut Oil Expression by Uniaxial Compression | 5355 |
| <i>Adekola, Kehinde Adedeji</i> | |
| Development of an Automatic Sorting System Using Machine Vision | 5363 |
| <i>N.H. Cho, D.I.Chang, H. Hwang, S.H.Lee, H.J. Kim</i> | |
| Pulsed UV-Light Decontamination of Small Fruits | 5375 |
| <i>Katherine L. Bialka, Ali Demirci</i> | |
| Water Content Variations in Carrot Tissue by Hyperspectral Imaging | 5387 |
| <i>Timea Kaszab, Ferenc Firtha, Andras Fekete</i> | |
| Estimation of Fruit Mass Loss by Optical Method | 5397 |
| <i>Andras Fekete, Medea Nagy, Timea Kaszab</i> | |
| Application of Electronic Tongue to White Wine Analysis | 5404 |
| <i>David B. Kantor, Aniko Csordas, Andras Fekete</i> | |
| Effect of Enhanced Deaeration during Densification of Corn Stover and Switchgrass | 5411 |
| <i>N. Kaliyan, R.V. Morey</i> | |
| Effect of Different Types of Starches on Extrudates Properties Containing DDGS | 5424 |
| <i>S. Kannadhasan, N. Chevanan, K. Muthukumarappan</i> | |
| Infrared Heat Treatment for Inactivation of <i>Staphylococcus Aureus</i> | 5440 |
| <i>Kathiravan Krishnamurthy, Soo Jin Jun, Joseph M.K. Irudayaraj, Ali Demirci</i> | |
| Changes in CIELab Color Parameters in Twin-Screw Extruded Rice-Glucose-Lysine Blend | 5452 |
| <i>Hanwu Lei, Roger Ruan, R. Gary Fulcher, Bernhard van Lengerich</i> | |
| Studies on Storage Kinetics and Sensory Characteristics of Fish and Rice Flour Co-extrudates | 5464 |
| <i>T.J. Shankar, S. Sokhansanj, S.Bandyopadhyay</i> | |
| Study on Mechanical Properties of Polyurethane Foams Prepared from Liquefied Corn Stover | 5479 |
| <i>Tipeng Wang, Zhihuai Mao, Yaoxian Yu, Dong Li</i> | |
| Research on the Physical Mechanics Properties of the Rape Stalk..... | 5487 |
| <i>Liao Qingxi,Liao Yitao,Shu Caixia,Tian Boping</i> | |
| Evaluation of Fresh Water Fish Freshness Based on Impedance Characteristics..... | 5497 |
| <i>Jun Zhang,Xiao Yu Li,Wei Wang,Wu Xiao</i> | |

| | |
|---|------|
| Thermogravimetric Characterization of Corn Stover As Gasification/pyrolysis Feedstock | 5508 |
| <i>Ajay Kumar, Lijun Wang, David D Jones, Milford A Hanna</i> | |
| The Impacts of Protein on Ethanol Fermentation Efficiency..... | 5521 |
| <i>R. Zhao, S. R. Bean, D. Wang</i> | |
| Physical Properties of Peanut Hull Pellets..... | 5537 |
| <i>O. O. Fasina</i> | |
| Compressibility and Physical Properties of Peanut Hull Grinds | 5549 |
| <i>O. O. Fasina, S. Jones, Z. Colley</i> | |
| Review and Analysis of Performance and Productivity of Size Reduction Equipment for Fibrous Materials..... | 5559 |
| <i>Mozammel Hoque, Shahab Sokhansanj, Alvin R. Womac, Ladan J. Naimi , Sudhagar Mani, Tony Bi, Jim Lim</i> | |
| Experimental Study on Saccharifying of Mash for Extrusion Cooked Maize Degermed Beer Adjunct | 5577 |
| <i>Shen Dechao, Wang Zhihua, Yin Yanghao.</i> | |
| Neural Network and Regression Modeling of Extrusion processing Parameters and Properties of Extrudates containing DDGS | 5586 |
| <i>N. Chevanan, K. Muthukumarappan, K.A. Rosentrater</i> | |
| A Comparison Between Chlorinated Water and Ozonated Water As an Antimicrobial Treatment During Tempering of Wheat..... | 5606 |
| <i>B. Dhillon, H. Sandhu, D. Wiesenborn, F. Manthey, C. E. Wolf-Hall</i> | |
| Computational Study of Oxygen Infiltration in Bag Silo Due to Superficial Damage | 5617 |
| <i>Silmara Bispo dos Santos; Marcio Arêdes Martins; Lêda Rita D'Antonino Faroni</i> | |
| Computational Study of Anaerobiosis Acceleration in Hermetic Storage of Maize Using Oxygen Depletion..... | 5624 |
| <i>Juliana Lobo Paes; Marcio Arêdes Martins; Lêda Rita D'Antonino Faroni</i> | |
| Identification of Volatile Metabolites in Stored Grain Head Space from Multiple Species..... | 5632 |
| <i>S. Neethirajan, D.S. Jayas, N.D.G. White</i> | |
| Strategies to Improve Durability of Switchgrass Briquettes | 5639 |
| <i>N. Kaliyan, R.V. Morey</i> | |
| Compression and Relaxation Characteristics of Selected Biomass Grinds | 5658 |
| <i>M.D. Shaw, L.G. Tabil</i> | |
| Rice Individual Kernel Breaking Force Distribution As an Indicator of Milling Quality | 5674 |
| <i>Rustico C. Bautista, Terry J. Siebenmorgen</i> | |
| Does a Pycnometer Measure the True Or Apparent Particle Density of Agricultural Materials | 5687 |
| <i>O. O. Fasina</i> | |
| Frictional Properties of Natural and Chemically-treated Flax Fibers | 5699 |
| <i>A. Opoku, S. Panigrahi, L. Tabil</i> | |
| Effect of Food Powder Physico-chemical Properties on Delivery Through a Feeder System..... | 5710 |
| <i>L. O. Pordesimo, C. I. Onwulata, C. W. P. Carvalho</i> | |
| Drying System Using CPC Evacuated Tubular Solar Collector | 5727 |
| <i>Gwi-Hyun Lee, Cheol H. Park, Whoa S. Kang</i> | |
| Effects of Drying Conditions on Thin-layers Drying of Wheat..... | 5736 |
| <i>Mohamed Abdelrahman, Zhihuai Mao</i> | |

| | |
|---|------|
| Mathematical Modelling of Thin Layer Drying Kinetics of Wheat | 5744 |
| <i>André Luís Duarte Goneli, Paulo Cesar Corrêa, Marcio Arêdes Martins</i> | |
| Moisture Sorption Hysteresis of the Rough Rice | 5752 |
| <i>M.A. Martins</i> | |
| Image Analysis and Dynamic Modeling of Thin Layer Hot-Air Drying of Pumpkins Pretreated by Osmotic Dehydration..... | 5763 |
| <i>M. Shafafi Zenoozian, S. M. A. Razavi, F. Shahidi, H. Feng, H. R. Poor Reza</i> | |
| Combustion of Shelled Corn in a Small-Scale Fluidized Bed | 5779 |
| <i>K.E. Treier, M.H. Klingman, H.M. Keener</i> | |
| Ultrasonication in Soy Processing for Enhanced Protein and Sugar Yields and Subsequent Bacterial Nisin Production | 5793 |
| <i>Bishnu Karki, Buddhi P. Lamsal, David Grewell, Anthony L. Pometto, J (Hans) van Leeuwen, Samir K. Khanal</i> | |
| Enzymatic Hydrolysis of Oilseeds for Enhanced Oil Extraction: Current Status | 5805 |
| <i>Prabal K. Ghosh, Digvir S. Jayas, Yogesh C. Agrawal</i> | |
| Design and evaluation of Modified Atmosphere Packaging for Guava (<i>Psidium guajava</i> L.) | 5818 |
| <i>B. Dhillon, A. Kumar, G. Sandhu</i> | |
| Development Of Tailor Made Feed With High Concentration Of α-Lactalbumin And β-Lactoglobulin From Cheese Whey | 5830 |
| <i>Chenchaiah Marella, K. Muthukumarappan</i> | |
| Fractionation Of α-Lactalbumin And β-Lactoglobulin From Tailor Made Cheese Whey Feed | 5843 |
| <i>Chenchaiah Marella, S. Kannadhasan, K. Muthukumarappan</i> | |
| Physical Properties of Extrudates Containing Distillers Grains Extruded in a Twin Screw Extruder | 5856 |
| <i>N. Chevanan, K.A. Rosentrater, K. Muthukumarappan</i> | |
| Phase angle and Impedance Measurements for Nondestructive Moisture Content Determination of In-Shell Peanuts Using a Cylindrical Sample Holder | 5871 |
| <i>C.V. K. Kandala, C. L. Butts</i> | |
| Properties of Medium-density Composite Particleboard From Creeping Wild Rye and High Density Polyethylene | 5880 |
| <i>Zhongli Pan, Yi Zheng</i> | |

VOLUME IX

| | |
|---|------|
| Physical Characteristics of Green Rice for Blanching and Consideration on Development of Mechanical Steam Blanching System | 5892 |
| <i>Jung D. So, Soon H. Kwon</i> | |
| Low Oxygen Storage of Farmer Stock Peanuts..... | 5905 |
| <i>C. L. Butts, T. H. Sanders, J. W. Dorner, M. C. Lamb</i> | |
| Applying Ground Penetrating Radar to Detect Foreign Objects Contained in the Paddy Warehouses | 5917 |
| <i>T. C. Yang, Fu-Ming Lu, W. J. Huang</i> | |
| Mathematical Modelling of Airflow Distribution in Grain Storage – A review | 5925 |
| <i>P. Gayathri, S. Jayas Digvir</i> | |
| Disinfestation of Barley Using Microwave Energy | 5937 |
| <i>R. Vadivambal, D.S.Jayas, N.D.G.White</i> | |

| | |
|---|------|
| Factors Adversely Affecting Ethanol Production in the Dry Grind Processing of Sorghum | 5950 |
| <i>X. Wu, Y. Sang, R. Zhao, P. Seib, Y. Shi, D. Wang</i> | |
| Influence of Ultrasonics on Sugar Release from Switchgrass | 5962 |
| <i>Melissa Montalbo, Gowrishankar Srinivasan, Raj Raman, Robert Anex, David Grewell</i> | |
| Integrating Biomass (DDGS) to Produce Heat and Power at Ethanol Plants | 5975 |
| <i>Matthew De Kam, Vance Morey, Douglas Tiffany, Dennis Hatfield</i> | |
| Flame Temperature Analysis of Biodiesel Blends and Components..... | 5989 |
| <i>Saroj Kumar Jha, Sandun Fernando</i> | |
| Pilot-scale Startup and Optimization for Converting Biodiesel into Aviation Jet Fuel | 5999 |
| <i>Rebecca A. Davis, Samia Mohtar, Junli Liu, Bernard Y. Tao, Melanie Thom</i> | |
| Determination of Yield and the Reaction Kinetics of Transesterification of Soybean Oil Using Solid Catalysts. | 6010 |
| <i>Alok Kumar Singh, Sandun Fernando</i> | |
| Real Time Correction of Distortion in X-ray Images of Spherical Or Cylindrical Objects and Its Application to Agricultural Commodities | 6020 |
| <i>Ron P. Haff</i> | |
| Low Cost Sorting of Pistachio Product Streams..... | 6034 |
| <i>E. S. Jackson, R. P. Haff</i> | |
| A Low-cost Microwave Sensor for Simultaneous and Independent Determination of Bulk Density and Moisture Content in Grain and Seed | 6041 |
| <i>Samir Trabelsi, Stuart O. Nelson</i> | |
| Assessment of A Chinese Spirit Using Electronic Sensory Tools | 6052 |
| <i>N. Wang, G.S.V. Raghavan, C. Vigneault</i> | |
| Tests of the Ability to Orient Apples using their Inertial Properties | 6067 |
| <i>P. Narayanan, A. M. Lefcourt, U. Tasch, R., Rostamian, M.S. Kim, Y.R. Chen</i> | |
| Physical and Chemical Characteristics of Biofuel Feedstocks Indigenous to Southeastern United States | 6078 |
| <i>O. O. Fasina, T. Ranatunga, B. Vaughan</i> | |
| A Novel Sensor to Monitor Colour Changes during Cheese Curd Syneresis in a Vat..... | 6085 |
| <i>C.D. Everard, D.J. O'Callaghan, M.J. Mateo, C.P. O'Donnell, C.C. Fagan, M. Castillo, F.A. Payne</i> | |
| BioEngineering Properties of Food Dough and Food Extrusion | 6093 |
| <i>K. Adekola</i> | |
| Effects of Dough Resting Time and Saturated Steam Pre-Treatment on the Textural Properties of Superheated Steam Processed Instant Asian Noodles..... | 6100 |
| <i>C. Pronyk, S. Cenkowski, W.E. Muir, O.M. Lukow, J. Wyatt, D. Nicholson</i> | |
| Effect of Processing Condition on the Energy Consumption and Quality of Rice | 6111 |
| <i>Poritosh Roy, Tsutomu Ijiri, Hiroshi Okadome, Daisuke Nei, Nobutaka Nakamura, Takeo Shiina</i> | |
| Microstructure analysis of dried yogurt: Effect of air, vacuum, freeze, and microwave vacuum drying processes | 6122 |
| <i>S. Jaya</i> | |
| Application of Artificial Neural Networks in NIRS Qualitative Analysis: Determination of Producing Area and Variety of Loquat..... | 6134 |
| <i>Yibin Ying, Xiaping Fu</i> | |

| | |
|--|------|
| Fluidized bed drying of rice using a pilot-scale drier..... | 6147 |
| <i>Terry J. Siebenmorgen, Rustico C. Bautista</i> | |
| Advances of Pulsed Fluidized Bed Drying Technology in China | 6158 |
| <i>Xiangyou Wang, Chuanzhu Sun, Chao Guo</i> | |
| Examination of the Optimum Condition for Dehydrofreezing Process of Radish with Vacuum Drying..... | 6168 |
| <i>Akio Tagawa, Jun Shizuka, Long Wu, Yukiharu Ogawa, Satoshi Murata</i> | |
| Drying Characteristics and Quality of Rough Rice Under Infrared Radiation Heating..... | 6176 |
| <i>Ragab Khir, Zhongli Pan, Adel Salim, Jamies F. Thompson</i> | |
| Drying Characteristics of Japanese Yam (<i>Dioscorea opposita</i> Thunb.) | 6194 |
| <i>Yoshiki Muramatsu, Akio Tagawa, Eiichiro Sakaguchi, Takao Myoda, Takamasa Kasai, Toshio Nagashima</i> | |
| Development of a New Technique for Fine Sorting of Brown Rice by Combination of Thickness Grader and Color Sorter..... | 6205 |
| <i>Shuso Kawamura, Kazuhiro Takekura, Hideyuki Takenaka</i> | |
| Study on Forced-air Pre-cooling of Longan..... | 6213 |
| <i>Yubai Chen, Chun-e Zhao, Zheng Ma</i> | |
| Effect of Thermodynamic Parameters on Tomato Ripening and Chilling Injury Under Heterogeneous Heat Treatment | 6220 |
| <i>Jianbo Lu, Clément Vigneault, Marie Thérèse Charles, G. S. Vijaya Raghavan</i> | |
| Characterization of Hyperspectral Spatially-resolved Scattering Images for Assessing Apple Fruit Firmness | 6232 |
| <i>R. Lu</i> | |
| Selection of Ingredient Levels for Development of High Fibre- Protein Enriched Biscuits Based on Apple Pomace and Black Soy-flour | 6245 |
| <i>Ivy Rana, Anupama Singh, B.K. Kumbhar</i> | |
| Determination of the Driving Characteristics of Cassava Chips in Passive Solar Dryers | 6257 |
| <i>A. Alonge, K. Oje, B. Durodola</i> | |
| Development of a STELLA Framework to Model Microbial Communities in Humic Lakes in Wisconsin..... | 6270 |
| <i>J. Malia Appleford, Glen K. Menezes, Luis F. Rodriguez, Angela D. Kent</i> | |
| A Kinetic Model of Delayed Fluorescence in Plants | 6283 |
| <i>Ya Guo, Brian Wirth, Jinglu Tan</i> | |
| Mathematical Modeling of Biomolecule Dynamics in Living Cells: A Continuum Mechanics Approach..... | 6293 |
| <i>No Author Given</i> | |
| Characterization of Chemical and Physical properties of DDGS..... | 6306 |
| <i>Rumela Bhadra, K.Muthukumarappan, Kurt A.Rosentrater</i> | |
| Diffusion of Protease into Meat & Bone Meal for Solubility Improvement and Potential Inactivation of the BSE Prion | 6337 |
| <i>Brian A. Coll, Rafael A. Garcia, William N. Marmer</i> | |
| Utilization of the Nutrients from an Anaerobic Digester Treating Animal Waste..... | 6351 |
| <i>Conly Hansen, Carl Hansen, Byard Wood, Ron Sims</i> | |
| Thermal Properties and Charcteristics of Oyster Shells of the Eastern Oyster..... | 6358 |
| <i>F. Wheaton</i> | |

| | |
|---|------|
| Hortibot: Feasibility Study of a Plant Nursing Robot Performing Weeding Operations – Part V | 6370 |
| <i>Claus G. Sørensen; Rasmus N. Jørgensen; Kjeld Jensen; Jørgen M. Pedersen; Michael Nørremark; Lars Aa Jensen</i> | |
| FeederAnt: an Autonomous Mobile Unit Feeding Outdoor Pigs | 6382 |
| <i>R.N. Jorgensen, C.G. Sorensen, H. Frank, B.H. Andersen, K. Jensen, J.M. Pedersen</i> | |
| Three Alternative Systems for <i>Agaricus bisporus</i> Mushroom Production on Grain-based Substrates..... | 6393 |
| <i>M. A. Bechara, P. Heinemann, P. N. Walker, C. P. Romaine</i> | |
| Engineering-economic System Models for Rural Ethanol Production Facilities | 6405 |
| <i>C. Li, L.F. Rodriguez, S.R. Eckhoff, M. Khanna, A.D. Spaulding</i> | |
| Attachment of <i>E. coli</i> to Microfabricated Artificial Plant Surfaces | 6423 |
| <i>Bunpot Sirinutsomboon, Michael Delwiche, Jeri Barak</i> | |
| Production of omega-3 fatty acid-rich algae from biodiesel waste for use as animal feed supplements | 6436 |
| <i>Denver Pyle, Zhiyoub Wen</i> | |
| Thin Stillage Treatment from Dry Grind Ethanol Plants with Fungi | 6446 |
| <i>M. Rasmussen</i> | |
| Optimization of Recombinant Human Lysozyme Production by <i>Kluyveromyces lactis</i> K7 | 6457 |
| <i>Eric L. Huang, Ali Demirci</i> | |
| High-oil-content Microalgae Selection for Biodiesel Production | 6471 |
| <i>Qingxue Kong, Fei Yu, Paul Chen, Roger Ruan</i> | |
| Modeling of Nisin Production by <i>Lactococcus lactis</i> | 6486 |
| <i>Thunyarat Pongtharangkul, Ali Demirci, Virendra M Puri</i> | |
| Cluster Analyses of Lunar-Mars Life Support Test Project Simulations | 6500 |
| <i>Ryan P. Goss, Luis F. Rodríguez, Haibei Jiang, Kirsten V. Stark, Scott Bell, David Kortenkamp</i> | |
| The LOX Calculator for Fasted Channel Catfish..... | 6510 |
| <i>P.R. Pearson, R.V. Beecham, C.D. Minchew, S.B. Bailey, M.E.M. Flanagan</i> | |
| Tolerance of <i>Platymiscium floribundum</i> Vog. Seeds to Water and Salt Stresses | 6521 |
| <i>Maria Conceição Carvalho da Silva, Sônia C. J. G. Perez, Antonio R. S. Andrade, Carlos Alberto Vieira de Azevedo</i> | |
| Development of Artificial Insemination System for Frozen Ovum | 6531 |
| <i>Jun Ninomiya, Tomoaki Inoue, Ken-ichi Kudoh, Toshiro Higuchi</i> | |
| Assessing Phosphorus Loads from the Pike River Watershed Into the Missisquoi Bay for the Development of a TMDL Program | 6541 |
| <i>B.K. Adhikari</i> | |
| Adaptation in Agriculture for Global Climate Management..... | 6556 |
| <i>C. M. Ouellet-Plamondon</i> | |
| Agricultural Biomass Resources in South Dakota..... | 6568 |
| <i>Kurt A. Rosentrater, Russell Persyn</i> | |
| Photovoltaic Powered Pumping and Control of a Drainback Solar Thermal System | 6596 |
| <i>James H. Dontje</i> | |
| Charged Ultrafiltration Membranes for Protein Separation..... | 6606 |
| <i>S.Bhushan, M.R.Etzel</i> | |

VOLUME X

| | |
|--|------|
| Purification and Quality Enhancement of Fuel Ethanol to Produce Industrial Alcohols with Ozonation and Activated Carbon..... | 6619 |
| <i>Shinnosuke Onuki, Lingshuang Cai, Hans van Leeuwen, Jacek A. Koziel</i> | |
| The Influence of External Loop Airlift Bioreactor Configuration on Bioreactor Hydrodynamics | 6632 |
| <i>S.T. Jones, T.J. Heindel</i> | |
| Effect of Hydrothermolysis on Ethanol Yield from Alamo Switchgrass using a Thermotolerant Yeast | 6646 |
| <i>Lilis Suryawati, Mark Wilkins, Danielle Bellmer, Raymond Huhnke, Niels Maness, Ibrahim Banat</i> | |
| Metabolic Flux Analysis of Carbon Flow Through Clostridium Thermocellum | 6660 |
| <i>B. Adotei, S. E. Nokes, H. J. Strobel</i> | |
| Adsorption Characteristics of Cellulase and B-glucosidase to Lignin, Cellulose and Pretreated Creeping Wild Rye Grass..... | 6673 |
| <i>Yi Zheng, Zhongli Pan, Ruihong Zhang, John Labavitch, Donghai Wang, Sarah Teter</i> | |
| Pretreatment of Lignocellulocics-rich Cattail by Rumen Microorganisms to Enhance Anaerobic Digestion Performance | 6687 |
| <i>Zhenhu Hu; Zhiyou Wen</i> | |
| The Effects of Physical Pretreatment on Degradation of Lignin | 6701 |
| <i>Lianhui Zhang, Zhihuai Mao</i> | |
| Development of Carbohydrate Bioavailability Assay for Assessing the Efficacy of Lignocellulose Pretreatment Technologies | 6712 |
| <i>Patrick T. Murphy, Kenneth J. Moore, D. Raj Raman</i> | |
| Green Solutions to Nonpoint Source Pollution: Reducing Stormwater Impacts from Coastal Development Using Ecological Strategies..... | 6721 |
| <i>Daniel R. Hitchcock</i> | |
| Innovative Stormwater Retrofits for Barrier Island Applications: Septic Tank Converstion in Holden Beach, Nc | 6734 |
| <i>Jason D. Wright, William F. Hunt III, Jonathan T. Smith</i> | |
| Prediction of Hydrologic Behavior in Two Alternative Wetland Designs Considered for Construction to Attenuate Nitrogen Loads in a Coastal Watershed | 6742 |
| <i>William H. Strosnider, Daniel.R. Hitchcock, Marianne K. Burke, Alan J. Lewitus, Norman.R. Shea</i> | |
| Evaluating Bioretention Nutrient Removal in a Rain Garden with an Internal Water Storage (IWS) Layer | 6760 |
| <i>Mark Dougherty, Charlene LeBleu, Eve Brantley, Christy Francis</i> | |
| Implementing Stormwater Best Management Practice Retrofits in Wilmington, Nc | 6776 |
| <i>Jason D. Wright, William F. Hunt III, Michael R. Burchell II, Christy A. Perrin</i> | |
| BMP Development and Implementation in Florida | 6793 |
| <i>Brian Boman</i> | |
| Nutrient Removal in Small Wastewater Treatment Systems | 6805 |
| <i>Michael Ogden</i> | |
| Hydroponics Plate-Grass: a Simple Way for Deep Treatment of Aquaculture Wastewater with High-Concentration Solids | 6825 |
| <i>Jinming Pan, Gendi Zhou, Yuanyuan Wang, Yibin Ying, Ruihong Zhang</i> | |
| Ecological Drought Regime, Prediction and Control in Baiyangdian | 6837 |
| <i>W. Cheng, L. Sheng, X. Wu</i> | |

| | |
|--|------|
| The Effect of Urban Stormwater BMPs on Runoff Temperature in Trout Sensitive Waters | 6848 |
| <i>M.P. Jones, W.F. Hunt</i> | |
| Elevation and Salinity Effects on Vegetation in a Created Tidal Marsh in Eastern North Carolina | 6857 |
| <i>J.A. Lindgren, R.O. Evans, S.W. Broome, M.R. Burchell, K.L. Bass</i> | |
| Management Implications for a Poplar Phytoremediation Plantation..... | 6871 |
| <i>L. E. Christianson, S. L. Hutchinson, G. A. Clark, C. Barden</i> | |
| Rapid Detection of Avian Mitochondrial Proteins Using Capillary Column Immunosensor | 6884 |
| <i>Lisa Bielke, Xiao-Li Su, Qian Sun, Yanbin Li</i> | |
| Nucleic Acid Sensor with Fluid Handling Components for the Detection of <i>Salmonella enterica</i> | 6891 |
| <i>A. T. Csordas, M. J. Delwiche, J. D. Barak</i> | |
| Rapid Detection of <i>Escherichia coli</i> O157:H7 Using Electrochemical Impedance Immunosensor | 6903 |
| <i>Yibin Ying, Yanbin Li</i> | |
| A Capillary Optical Biosensor for Rapid Detection of Atrazine Residue in Water and Beverages..... | 6915 |
| <i>Q. Sun, X-L. Su, J. Millett, Y. Li</i> | |
| A Label-free, Microfluidics and Interdigitated Array Microelectrode Based Impedance Biosensor in Combination with Magnetic Nanoparticles Immunoseparation for Detection of <i>Escherichia coli</i> O157:H7 in Food Samples..... | 6922 |
| <i>Madhukar Varshney, Yanbin Li</i> | |
| Interdigitated Array Microelectrode Based Immunosensor for Detection of Avian Influenza Viruses..... | 6933 |
| <i>Yun Wang, Ronghui Wang, Yanbin Li</i> | |
| Microfluidic Device Monitoring of Waterborne Pathogens in Model Water Distribution Systems | 6946 |
| <i>Jeong-Yeol Yoon, Jin-Hee Han, Christopher Y. Choi, Brian Heinze, Lonnie J. Lucas</i> | |
| Lab-on-a-chip Monitoring of Enteric Bacteria in Crop Production Systems Using Automatic Drip Sampling | 6957 |
| <i>Jeong-Yeol Yoon, Keesung Kim, Jennine Chesler, Jin-Hee Han, Lonnie J. Lucas, Chieri Kubota</i> | |
| A Review of Dissolved Oxygen Concentration Measurement Methods for Biological Fermentations | 6970 |
| <i>No Author Given</i> | |
| Effects of Biomass Gasification Tars on Carbon Mineralization and Respiration from Some Soil Conditions | 6985 |
| <i>R.E. Aldas, B.M. Jenkins, J.S. VanderGheynst</i> | |
| Enhancement of Hydrolysis and Acidification of Solid Organic Waste by a Rotational Drum Fermentation System with Methanogenic Leachate Recirculation | 7001 |
| <i>Ling Chen, Wei Zhong Jiang, Yutaka Kitamura, Baoming Li</i> | |
| Biodegradation and Characterization of Polyhydroxybutyrate Exposed to Anaerobic Municipal Sludge | 7012 |
| <i>Benjamin E. Stevens, Kelly A. Rusch, Chandras</i> | |
| Product Composition of Glycerin Gasification Under Sub- and Supercritical Water Treatment: Effect of Reaction Conditions | 7029 |
| <i>Agus Haryanto, Sandun Fernando, Sushil Adhikari</i> | |

| | |
|---|------|
| Microwave Pretreatment of Switchgrass to Enhance Enzymatic Hydrolysis..... | 7042 |
| <i>Deepak R. Keshwani, Jay J. Cheng</i> | |
| Controlled Temperature Effects on Biofiltration of Recirculation Systems for Oyster Studies..... | 7050 |
| <i>Milton Saidu, Steven Hall, Terrence Tiersch</i> | |
| Forced Convection Airflow Driven by Massive Evaporation of Water from Moss Served as a Cover Plant for Building Surfaces | 7059 |
| <i>J.E. Park, H. Murase</i> | |
| Student Portfolios, Business Communications, Engineering Poetry Contests, and Grading Multiple Drafts of Technical Writing Documents | 7069 |
| <i>Ann D. Christy, Margaret E. Owens, Mary J. Faure</i> | |
| Concurrent Teaching of Technical Communication and the Engineering Design Process | 7078 |
| <i>D.D. Mann, S. Ingram, K.J. Dick, D.S. Petkau, M.G. Britton</i> | |
| How Can Large-Scale Hydrologic Modeling Enhance Student Learning and Decision Making?..... | 7086 |
| <i>M. R. Abou, Najm, R. H. Mohtar, K. A. Cherkauer</i> | |
| Master of Science in Agricultural Operations Management: An Online MS Degree Program at The University of Tennessee - Martin | 7097 |
| <i>Timothy N. Burcham, Joey Mehlhorn, Barbara Darroch, Philip Smartt, Thomas Greer</i> | |
| Sharing Distance Education Courses Among Universities..... | 7108 |
| <i>L. Schumacher, T. Brumm, J. Slocombe, J. Schinstock</i> | |
| Integration of Tablet PCs and Multimedia Technologies in Engineering Instruction..... | 7122 |
| <i>C. N. Thai</i> | |
| International Agriculture Case Studies for Enhancement of Undergraduate Competency in Cultural Adaptability | 7131 |
| <i>Amy Kaleita, Brian Steward, Steve Mickelson, Tom Brumm, Giorgi Chighladze</i> | |
| Developing Sustainable Solutions for Impoverished Communities in South Africa: A Student Centered and Service Learning Capstone Design Experience..... | 7138 |
| <i>Andy Ward, Kerry Hughes Zwierschke, Carol Moody, Ann Christy</i> | |
| History of the Changes in the Technical Subject Matter of ASAE's Periodicals: 1950-1999 | 7148 |
| <i>William J. Chancellor</i> | |
| "Energy and Bio-oil Production from Poultry Litter using Fractionation and Pyrolysis"- A Quality Assurance Project Plan (QAPP) | 7160 |
| <i>K. Singh, J. W. Worley, L. M. Rissee, K. C. Das, S. Thompson</i> | |
| Potato Planter Development via Capstone Design and Engineering Tools | 7174 |
| <i>Dean D. Steele, Thomas A. Bon</i> | |
| Performance Analysis of a Mediated Yeast based Biological Fuel Cell..... | 7186 |
| <i>D. A. Gunawardena, S. D. Fernando, P. To</i> | |
| Effects of No.2 Diesel, B-20 Soy Biofuel Blend, and B-100 Soy Biofuel on Performance, Efficiency, and Emissions in a Compression Ignition Tractor Engine | 7200 |
| <i>T. Brown, M. Hardin, M. Roller, D. Johnson, G. Wardlow</i> | |
| Environmental Stewardship Education Partnership | 7206 |
| <i>Carrie Vollmer-Sanders, Sandra Batie, Christopher Wolf, David Beede</i> | |
| Topic Grid: Details of a curriculum on one page..... | 7218 |
| <i>D. R. Buckmaster</i> | |

| | |
|---|------|
| Engaging Students in Environmental Systems Management..... | 7228 |
| <i>Natalie Carroll</i> | |
| Integrating Precision Technologies into a Machinery Management Course..... | 7239 |
| <i>D.M. Johnson</i> | |
| Forecasting Energy Demand for Mechanized Rice Cultivation in Rural India..... | 7245 |
| <i>Debendra C. Baruah; Ganesh C. Bora</i> | |
| Model P.K. Oil Plant for Developing Countries..... | 7256 |
| <i>K. A. Adekola</i> | |
| Modifications and Performance Evaluation of a Cashew-Nut Cracker | 7266 |
| <i>E. A. Ajav, D. O. Oke</i> | |
| Ridge Seeding of Pre-germinated Rice Seeds on Puddle Bed..... | 7275 |
| <i>S. K. Mathanker, V. V. Singh</i> | |
| Incorporating Farmer Behavior in Farm Mechanization Development | 7282 |
| <i>J. Hendrawan, D. Tooy, H. Murase</i> | |
| The Biosystems Engineering Design Challenge at University College Dublin | 7294 |
| <i>T. Curran, C. Blaney, E. Cummins, N. Holden, K. McDonnell</i> | |
| Field Testing of Wood-based Biomass Erosion Control Materials on Obliterated Roads | 7303 |
| <i>R. Foltz, N. Copeland</i> | |
| Engineering Factors for Biomass Baler Design | 7312 |
| <i>D. Lanning, J. Dooley, M. DeTray, C. Lanning</i> | |
| Processing Woody Debris Biomass for Co-Milling with Pulverized Coal..... | 7322 |
| <i>D. Mitchell, B. Rummer</i> | |

Author Index