



Tuesday Morning, June 23

Tuesday, June 23 – 9:30AM-12:30PM

- 201 POWER AND MACHINERY DIVISION POSTER SESSION (PM-22) Remote Sensing and Other Issues in Precision Agriculture**
Moderator: Kelly R. Thorp, USDA ARS, Maricopa, AZ (PM-54)
(PM-3) Pesticide Application Technologies - Part 3
Moderator(s): Hong Young Jeon, USDA, Wooster, OH (PM-23/6)
Heping Zhu, USDA ARS, Wooster, OH (PM-23/6)
- Location: Summit Pavilion
- | POSTER # | PAPER # | PRESENTATION TITLE |
|----------|---------|--|
| 1 | 095777 | Mapping temporal changes of soil salinity in Al-Rumais region of Oman using geographic information system and remote sensing techniques.
Yaseen A. Al-Mulla, Sultan Qaboos Univ, Al Khod, Oman (Y.A. Al-Mulla, S.S. Al-Adawi) |
| 2 | 097380 | Multivariate Classifier for Nitrogen Status Determination Using Spectral Indices
Enrique A. Alves, Federal University of Vicosa, Vicosa, Minas Gerais Brazil (Presenter: Francisco de Assis Carvalho Pinto; S.A. Abrahão, F. de A.C. Pinto, D.M. Queiroz, E.A. Alves) |
| 3 | 095549 | Methods for georectification and spectral scaling of remote imagery using ArcView, ArcGIS, and ENVI
Roger Bright, USDA ARS APTRU, Stoneville, MS (Presenter: Steve Thomson; J.R. Bright, S.J. Thomson, Y. Huang) |
| 4 | 097323 | Use of Aerial Photos and SSURGO for Organic Matter Mapping
Brian K. Gelder, Iowa State Univ, Ames, IA (B. Gelder, R. Anex) |
| 5 | 095984 | Development of a Variable Rate Controller for Precision Agriculture
Yubin Lan, USDA ARS, College Station, TX (W. Wu, Y. Lan, W.C. Hoffmann, R. Lacey, Z. Tian) |
| 6 | 097159 | A Laser System for Developing High Resolution DEM Data
Peng Li, Kansas State Univ, Manhattan, KS (P. Li, N. Zhang, F. Fox, L. Wagner, D. Oard, S. Wang) |
| 7 | 096741 | Machine Vision for Weed Mapping under Center Pivot Irrigation System
Francisco A.C. Pinto, Universidade Federal De Vicosa, Vicosa MG, Brazil (M.C. Silva Jr., F.A.C. Pinto, J.G. Gil, D.M. Queiroz, L.M.N. Gracia, G.R. Ruiz) |
| 8 | 095828 | Mathematic Models of Water Application for a Variable Rate Irrigating Hill-seeder
Qing Yang, Northwest Sci-Tech Univ of Agriculture & Forestry, Yangling, Shaanxi, Peoples Republic of China (S. Yang, C. Yang,.) |
| 9 | 095891 | Rice Blast Detection Using Multispectral Imaging Sensor and Support Vector Machine
Long Qi, Jilin University, Changchun, Jilin China (L. Qi) |
| 10 | 095582 | Bare spot mapping in wild blueberry fields using digital photography
Qamar Uz Zaman, Nova Scotia Agr College, Truro, NS Canada (Q. Zaman, F. Zhang, A. Schumann, D. Percival) |
| 11 | 096818 | Development of a GIS-Based Model for the Generation of Agricultural Sprayer-Applied Chemical Distribution Maps
Joe D. Luck, Univ of Kentucky, Lexington, KY (J.D. Luck, S.K. Pitta, S.A. Shearer) |
| 12 | 095889 | Crop Water Stress Measurement System Based on Acoustical Technology and Microcomputer
Shifeng Yang, Tianjin Univ of Science & Technology, Tianjin, Peoples Republic of China (S. Yang, X. Wang, J. Zhao, J. Guo) |
| 13 | 096129 | Detecting Bare Spots in Wild Blueberry Field using Color Images
Fangming Zhang, NingBo Institute of Technology, ZheJiang University, NingBo, ZheJiang Peoples Republic of China (Presenter: Qamar Zaman; F.M. Zhang, Q. Zaman, A.W. Schumann, D.C. Percival, D. Nams, T. Esau) |
| 14 | 096146 | Detecting Weeds in Wild Blueberry Field Based on Color Images
Fangming Zhang, NingBo Institute of Technology, ZheJiang University, NingBo, ZheJiang Peoples Republic of China (Presenter: Qamar Zaman; F.M. Zhang, Q. Zaman, A.W. Schumann, D.C. Percival, D. Nams, T. Esau) |
| 15 | 096199 | Performance of a two application systems of pesticides in citrus
Casimiro D. Gadanha Jr, ESALQ/USP, Piracicaba/Sao Paulo, Brazil (R.D. Collantes Veliz, J.A. Vasquez Castro) |
| 16 | 097068 | Influence of Formulation on the Physical Properties of the Fluid, Spray Characteristics and Insecticide Deposits on Stored Grains
Casimiro D. Gadanha Jr, ESALQ/USP, Piracicaba/Sao Paulo, Brazil (J.A. Vasquez-Castro, G.C. De Baptista, C.D. Gadanha, JR., L.R.P. Trevizan) |
| 17 | 095988 | Electronic Nose Detection of Volatile Organic Compounds
Yubin Lan, USDA ARS, College Station, TX (A. McEney, Y. Lan, W.C. Hoffmann, B. Fritz) |
| 18 | 097378 | Design and Experiments of Aerial Electrostatic Spraying System Assembled in Helicopter
Yu Ru, Nanjing Forestry Univ, Nanjing, Jiangsu Peoples Republic of China (H. Zhou, Y. Ru, C. Shu, J. Zheng, H. Zhu) |
| 19 | 095950 | Mixing Performance of Pesticide Mixer for Direct Injection based on Image Processing
Youlin Xu, Nanjing Forestry University, Nanjing, Jiangsu Peoples Republic of China (Y. Xu, J. Guo, J. Zheng) |
| 20 | 096469 | A System for Harvesting of Lotus Roots Using the Fluids of High Pressure
Gwi-Hyun Lee, Kangwon National Univ, Chuncheon, South Korea (G.-H. Lee, W.S. Kang) |

Tuesday, June 23 – 9:30AM-12:30PM

- 202 (SW) PERSPECTIVES AND INNOVATIONS IN SOIL AND WATER ENGINEERING - PART 1 (Invited Presenters)**
Moderator: R Daren Harmel, USDA ARS, Temple, TX (SW Division)
LOCATION: Reno
- This invited lecture session involves recognized leaders in soil and water engineering and focuses on current research, state-of-the-art advances, and/or historical and future perspectives in soil and water engineering. Each of the six Soil and Water Division Groups (Hydrology, Erosion, Irrigation, Drainage, Water Resource Structures, and Countryside Engineering) is represented.
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | | Recent Developments to the SWAT Ecological Model
Jeffrey G. Arnold, USDA ARS, Temple, TX (J.G. Arnold, M. White, R. Srinivasan, P.W. Gassman, C.H. Rossi) |
| 10:05AM | | Drainage Challenges and Alternatives in the 21st Century
Robert O. Evans, North Carolina State Univ, Raleigh, NC (R. Evans, R.W. Skaggs, J. Fouss) |
| 10:35AM | | Break |
| 10:45AM | | Where has Countryside Engineering Gone?
Kyle Mankin, Kansas State Univ, Manhattan, KS ZZ (K. Mankin) |

Tuesday, June 23 – 9:30AM-12:30PM

- 203 (SW-48) DRIP IRRIGATION CHALLENGES AND EVALUATIONS (SW-245)**
Moderator: Jay D. Jabro, USDA ARS, Sidney, MT,
LOCATION: Nevada 9
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 095927 | Unique Challenges with Subsurface Drip Irrigation
Freddie Lamm, Kansas State Univ, Colby, KS (F. R. Lamm) |
| 9:50AM | 096490 | Peanut, Cotton, and Corn Yield and Partial Net Income with Two Surface Drip Lateral Spacings
Russell C. Nuti, USDA ARS NPRL, Dawson, GA (R.B. Sorensen, M.C.Lamb, R.C. Nuti) |
| 10:05AM | 095922 | Potential and Limitation of the Use of Soil Moisture Sensor to Control Drip Irrigation
Lincoln Zotarelli, University of Florida, Gainesville, FL (L. Zotarelli, M.D. Dukes) |
| 10:20AM | 096329 | Using Drip Irrigation to Germinate Seed and Set Transplants: Techniques and Benefits
Inge Bisconer, Toro Micro-Irrigation, El Cajon, CA (I. Bisconer) |
| 10:35AM | 096578 | Effect of Emitter Spacing on Soil Water Redistribution, Corn Yield and Water Productivity under Subsurface Drip Irrigation (SDI)
Gerard Arbat, University of Girona, Girona, Spain (Presenter: Jaume Puig-Bargue; G. Arbat, F.R. Lamm, A.A. Abou Khaira) |
| 10:50AM | | Break |
| 11:00AM | 096529 | Effect of low-cost drip irrigation system on crop yield and water use efficiency under vegetable-agroforestry production systems in the Philippines
Victor B. Ella, Univ of the Philippines Los Banos , Philippines (Presenter: Manuel R. Reyes; V.B. Ella, N. Oilla, M.R. Reyes, B. Yoder, D. Midmore, T. Dillaha) |
| 11:15AM | 095542 | Chemical Damages of Chlorine and Acids Applications
Rubens Duarte Coelho, Univ of Sao Paulo, Pieaciaba, Brazil (R.D. Coelho, M.B. Teixeira) |
| 11:30AM | 096487 | Suction of Soil Particles Under Vacuum Conditions in Subsurface Drip Irrigation: Comparative Test of Emitters
Rubens Duarte Coelho, Univ of Sao Paulo, Pieaciaba, Brazil (R.D. Coelho, J.L. Copquer dos Santos Jr., C.M. Castiblanco, M.B. Teixeira) |
| 11:45AM | 096483 | Optimization of Cost Design and Energy Use of Plot Irrigation Systems in Navarra, Spain
Camilo Robles, UPNA, Pamplona, Spain (Presenter: Miguel A. Campo; M.A. Campo, A. Zamarron, C. Robles) |

Tuesday, June 23 – 9:30AM-12:30PM

- 204 (IET-12C) MACHINE VISION FOR AGRICULTURAL AUTOMATION AND MANAGEMENT - PART 3 (IET-312)**
Moderator: Ruixiu Sui, Texas A&M Univ, College Station, TX
LOCATION: Sierra 1
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | 096150 | Citrus Fruit Detection Using Multispectral Imaging
Duke M. Bulanon, Univ of Florida, Gainesville, FL (D.M. Bulanon, T. Burks, V. Alchanatis) |
| 9:50AM | 096141 | Segmentation Of Touching Rice Kernels By Gradient Vector Flow and Watershed
Jifeng Ning, Northwest A&F University, Yangling, Shaanxi Peoples Republic of China (J. Ning, S. Yang, D. He) |
| 10:05AM | 095878 | Evaluating the Ability to Detect Foreign Objects in Crops Using Laser Range Scanners Mounted On Agricultural Vehicles
Zacharie J-L Doerr, University of Ottawa, Ottawa, ON Canada (Z. Doerr, Ph.D, C. Lagué) |
| 10:20AM | 096349 | Study on Illumination Mode and Contour Extraction Algorithm of Pig Growth Inspecting System Base on Binocular Stereovision Technology
Weisen Fu, China Agricultural University, Beijing, China (W. Fu) |



Technical Sessions



ASABE 2009 ANNUAL INTERNATIONAL MEETING - RENO, NEVADA USA

- 10:35AM 096654 **Image Based Separation of Dairy Cows for Automatic Lameness Detection with a Real Time Vision System**
Claudia Bahr, Katholieke Univ Leuven, Leuven, Belgium (A. Poursaberi, A. Pluk, C. Bahr, W. Martens, I.Veermae, E. Kokin, J. Praks, V. Poikalainen, M.Pastell, J. Ahokas, A. van Nuffel, J. Vangeyte, B. Sonck, D. Berckmans)
- 10:50AM **Break**
- 11:00AM 096434 **Growth Monitoring and Variable-rate Fertilizing for Winter Wheat Based on Multi-Spectral Reflectance**
Yankun Feng, China Agricultural Univ, Beijing, China (W. Wang)
- 11:15AM 097267 **Comparison of Algorithms for Optical Cherry Calibration**
Per Bjarne Bro, Universidad de Talca, Region Del Maule, Chile (P.B. Bro, N. Narria)
- 11:30AM 096138 **Three-Dimensional Modeling of Fruit Trees**
Amy L. Tabb, AFRS ARS USDA, West Lafayette, IN (A. Tabb, J. Park, A.C. Kak)

Tuesday, June 23 – 9:30AM-12:30PM

205 (IET-20) SPECTROSCOPY AND SPECTROSCOPIC SENSING (IET-348)
Moderator: Sreekala G. Bajwa, Univ of Arkansas, Fayetteville, AR
LOCATION: Sierra 2

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 096308 | Single Channel, Multi-Channel, Multi-Spectral, Hyperspectral, Absorbance, Reflectance, Fluorescence, Transmission – Understanding the differences in 20 minutes
Jay Zakrzewski, Headwall Photonics, Fitchburg, MA (J. Zakrzewski) |
| 9:50AM | 096471 | Uninformation Variable Elimination and Successive Projections Algorithm in Mid-infrared Spectral Wavenumber Selection
Di Wu, Zhejiang University, Hangzhou, Zhejiang China (D. Wu, F. Cao, S. Feng, Y. He) |
| 10:05AM | 095890 | Internal Quality Assessment of Fruit Using Online NIR Spectrum
Liu Yande, Jiangxi Agricultural University, Nanchang, Jiangxi China (Y. Liu, X. Sun, P. Zhou) |
| 10:20AM | | Break |
| 10:30AM | 095769 | Determining the Optical Properties of Two-layer Turbid Materials Based on Spatially Resolved Diffuse Reflectance
Haiyan Cen, Michigan State Univ, East Lansing, MI (Presenter: Renfu Lu; H. Cen, R. Lu) |
| 10:45AM | 095755 | Integrated capture and spectroscopic detection of viruses
Mark R. Riley, Univ of Arizona, Tucson, AZ (C.A. Vargas, A.A. Wilhelm, P. Lucas, K.A. Reynolds, M.R. Riley) |
| 11:00AM | 095926 | Determination of Peanut Pod Maturity by Near-Infrared Spectroscopy
William R. Windham, USDA ARS, Athens, GA (W. Windham) |
| 11:15AM | 090049 | Optical Filter Design of Fluorescence Emission to Detect Poultry Skin Tumors
Taemin Kim, NASA Ames Research Center, Moffett Field, CA (T. Kim) |

Tuesday, June 23 – 9:30AM-12:30PM

206 (IET-7) EMERGING WEB-BASED INFORMATION SYSTEMS (IET-254)
Moderator: Howard W. Beck, Univ of Florida, Gainesville, FL
LOCATION: McKinley

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 096486 | A Tool for Labelling Individual Sounds from Continuous Recordings: An Application to Bio-Acoustics
Daniel A. Berckmans, Katholieke Univ Leuven, Leuven, Belgium (Presenter: Dr. Claudia Bahr; V. Exadaktylos, S. Ferrari, M. Silva, M. Guarino, D. Berckmans) |
| 9:50AM | 096994 | Web-based Decision Support Tool for Nutrient and Pesticide Analysis
Acushla Antony, Purdue Univ, West Lafayette, IN (A. Antony, B. Engel) |
| 10:05AM | 096157 | Development of a disease forecasting system for strawberries as a tool on AgClimate
Willingthon Pavan, Univ of Florida, Gainesville, FL (W. Pavan, C.W. Fraisse, N. Peres) |
| 10:20AM | 095747 | Increasing Productivity in Agriculture using Context-aware and Self-organizing Systems
Thilo Steckel, CLAAS CSE GmbH, Harsewinkel, NRW Germany (C. Loeser, T. Steckel, R. Trunko) |
| 10:35AM | 096135 | Design and implementation of Web-based telediagnosis system for layers diseases
LiGen Yu, China Agricultural University, Beijing, China (L.G. Yu) |
| 10:50AM | | Break |
| 11:00AM | 090017 | Educational Applications of Virtual World Environments
Howard W. Beck, Univ of Florida, Gainesville, FL (H.W. Beck) |
| 11:15AM | 096765 | Design of an economical, high channel, web-enabled data acquisition system
Joshua A. Sander, Univ of Illinois, Urbana, IL (J. Sander, K. Bhalerao, X. Wang) |
| 11:30AM | 097190 | NHDPlus Dataset - Primed for Automation
Jessica J. Prenger Bhalerao, Waterborne Environmental Inc, Savoy, IL (Presenter: Luke Zwilling; J. Prenger Bhalerao, P.S. Miller, C.M. Harbour, R.Vamshi, L. Zwilling) |

Tuesday, June 23 – 9:30AM-12:30PM

207 (SE-13) TECHNOLOGIES FOR MITIGATING EMISSIONS FROM STATIONARY SOURCES (SE-305, SE-412, PM-237/3)
Moderator: Kenneth D. Casey, Texas AgriLIFE RESEARCH, Amarillo, TX
LOCATION: Nevada 4

- | TIME | PAPER # | PRESENTATION TITLE |
|------|---------|--------------------|
|------|---------|--------------------|

- 9:30AM **Introduction**
- 9:35AM 097048 **Nitrous Oxide Production and Ammonia Removal in Gas-Phase Compost Biofilters**
Guilherme Maia, Univ of Kentucky, Lexington, KY (G. Del Nero Maia, V.G.B. Day, R.S. Gates, J.L. Taraba, G.T. Sales, N. Lovanh, A. Singhand)
- 9:50AM 096096 **Assessment of Biofilter Media Particle Sizes for Removing Ammonia**
Glogerley T. Sales, University of Illinois at Urbana-Champaign, Urbana, IL (G.T. Sales, V.G.B. Day, R.S. Gates, N. Lovanh, G. Del Nero Maia, A. Singh)
- 10:05AM 097037 **Alternative Gas-phase Biofilter Media Characteristics and Performance**
Kevin A. Janni, Univ of Minnesota, St Paul, MN (K.A. Janni, D.R. Schmidt, A.L. Goldman, T.A. Schaar)
- 10:20AM 096767 **Gaseous Production from Impermeable Swine Waste Storage Tanks**
Joseph Louis Taraba, Univ of Kentucky, Lexington, KY (J.L. Taraba, A. Singh, G.V. Day, R.S. Gates, G.D.N. Maia)
- 10:35AM **Break**
- 10:45AM 096155 **Low-temperature catalytic oxidation of odorous volatile organic compounds**
Praveen Kolar, Univ of Georgia, Morrisville, NC (P. Kolar, J. Kastner)
- 11:00AM 095712 **Catalytic Ozonation of Ammonia Using Biomass Char and Wood Fly Ash**
James R. Kastner, Univ of Georgia, Athens, GA (J.R. Kastner, J. Miller, P. Kolar, K.C. Das)
- 11:15AM 095996 **Evaluation of a Low Cost Surface Aeration System in an Anaerobic Poultry Lagoon**
Mohammed Saidul Borhan, Texas A&M Univ, College Station, TX (M.S. Borhan, S. Mukhtar, J. Zhu, S. Rahman)
- 11:30AM 096262 **Simulation of Ammonia Emissions from Scrape and Flushed Dairy Manure Post-Collection Storages**
Venkata K. Vaddella, Washington State Univ, Pullman, WA (V.K. Vaddella, P.M. Nedgwa, H.-S. Joo)

Tuesday, June 23 – 9:30AM-12:30PM

208 (SE-4) ANIMAL RESPONSES TO ENVIRONMENTAL FACTORS (SE-301, SE-413)
Moderator: Angela R. Green, Univ of Illinois, Urbana, IL
LOCATION: Nevada 1

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | 095677 | Development of a Reusable Tympanic Temperature Probe for Beef Cattle
Jeremiah D. Davis, Mississippi State Univ, Starkville, MS (J.D. Davis, J.L. Purswell, T.B. Schmidt) |
| 9:50AM | 096003 | Thermal Stress Indices for Cattle
Kifle G. Gebremedhin, Cornell Univ, Ithaca, NY (Presenter: Shuhai Li; K.G. Gebremedhin, S. Li, C.N. Lee, B. Collier, P. Hillman) |
| 10:05AM | 096201 | Water spray cooling during handling of feedlot cattle
Tami M. Brown-Brandl, USDA ARS-USMARC, Clay Center, NE (T.M. Brown-Brandl, R.A. Eigenberg, J.A. Nienaber) |
| 10:20AM | 096132 | An Evaluation of Pullet Ammonia Aversion Using a Preference Test Chamber
Morgan D. Hayes, Iowa State University, Ames, IA (M. Hayes, H. Xin, H. Li) |
| 10:35AM | 096359 | Estimating Environmental Conditions Impact on Hatching Results Using Multivariable Analysis
Irenilza A. Naas, Univ de Campinas-UNICAMP, Campinas SP 18 081-970, Brazil (I.A. Naas, A.C.S. Gigli, M.S. Baracho, D.D. Salgado) |
| 10:50AM | | Break |
| 11:00AM | 096028 | Measuring Core Body Temperature in Heavy Broiler Chickens
Joseph L. Purswell, USDA ARS, MS (J.L. Purswell, J.D. Davis, H.A. Olanrewaju, A.S. Kiess, S.L. Branton) |
| 11:15AM | 096555 | A Relational Study of Gait Score (As a Measure for Lameness) With Breast Yield in Broiler Chickens
Daniel A. Berckmans, Katholieke Univ Leuven, Leuven, Belgium (O. Cangar, N. Everaert, C. Bahr, J. Zoons, E. Decuyper, D. Berckmans) |
| 11:30AM | 096356 | Swine vocalization for identifying welfare pattern
Irenilza A. Naas, Univ de Campinas-UNICAMP, Campinas SP Brazil (I.A. Naas, Y.B. Tolon, S.L.L. Campos) |
| 11:45PM | 095969 | Preliminary Evaluation of the Apparent Short Term Heat-Stress of Dairy Ewes Reared Under Hot Summer Conditions
Panagiotis B. Panagakis, Agr Univ of Athens, Athens, Greece (P. Panagakis, E. Chronopoulou) |

Tuesday, June 23 – 9:30AM-12:30PM

209 (SE-7/BE-4) INNOVATIVE TECHNOLOGIES AND ENERGY STRATEGIES FOR CONTROLLED ENVIRONMENTS AND ORGANIC FARMING (Lecture and Poster Session)(SE-303, BE-4, BE-22, IET-318)
Moderator(s): Mark G. Lefsrud, McGill Univ, Ste-Anne-de-Bellevue, QC Canada, Hala I. Chaoui, Univ of Illinois, Champaign, IL
LOCATION: Nevada 2

This is a joint talk between the greenhouse/growth chamber group and organic farming.

- | TIME | PAPER # | PRESENTATION TITLE |
|--------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | 096599 | Improving the thermal characteristics of an avian egg during incubation by means of forced convection
Stefan DM Andriessens, Katholieke Univ of Leuven, Heverlee, Vlaams-Brabant Belgium (Presenter: Claudia Bahr; S. Andriessens, S.E. Özcan, A. Van Brecht, D.Berckmans) |



Technical Sessions



ASABE 2009 ANNUAL INTERNATIONAL MEETING RENO, NEVADA USA

- 9:50AM 097474 **Pullet Housing Comparison of Dimmable Incandescent Lamps vs. Incandescent Rope Light vs. Compact Fluorescent Light Systems**
Ronald D. MacDonald, Agviro Inc, Guelph, ON Canada (R. MacDonald, M. Armstrong, K. Gibb, D. Karton)
- 10:05AM 095938 **Using Wastewater for Mass Microalgae Production as an Energy Crop**
Min Min, Univ of Minnesota, St Paul, MN (M. Min, L. Wang, A.W. Sealock, Y.-F. Chen, Y.Li, P. Chen, R.C. Polta, R. Ruan)
- 10:20AM 097059 **Cooling Capacity Assessment of Semi-Closed Greenhouses**
Wee Fong Lee, Ohio State University, Wooster, OH (Presenter: Peter P. Ling; W.F. Lee, P.P. Ling)
- 10:35 **Break**
- 10:45AM 096546 **Material Characteristics of Agricultural Byproducts for Use in Vermicomposting**
Douglas W. Hamilton, Oklahoma State Univ, Stillwater, OK (D.W. Hamilton)
- 11:00AM 095792 **Estimation of Quality of Fertilizer Application and Economic Effect**
Joseph Kaplan , Minneapolis, MN (J. Kaplan)
- 11:15AM 097205 **Umbilical farming**
Claus Gron Sorensen, University of Aarhus, Tjele, Denmark (C.G. Sorensen, O. Green)

Tuesday, June 23 – 9:30AM-12:30PM

- 210 **(SE-24) ENERGY RECOVERY FROM ANIMAL MANURE (SE-412, SW-263, BE-28)**
Moderator: Amy M. Schmidt, Mississippi State Univ, Mississippi State, MS
LOCATION: Nevada 6
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 097303 | Co-Digestion of dairy manure and poultry processing wastewater to enhance biogas production in small size farms
Jactone Arogo, Virginia Polytechnic Inst & State Univ, Blacksburg, VA (J.Arogo; L. Li; R. Roshdieh; J. Ignosh) |
| 9:50AM | 096769 | Evaluation of Laboratory Biochemical Methane Potentials as a Predictor of Anaerobic Dairy Manure Digester Biogas and Methane Production
Gayle C. Bishop, Iowa State Univ, Ames, IA (G.C. Bishop, R.T. Burns, L.B. Moody, T.A. Shepherd, C.A. Gooch, R. Spajic, J. Pronto) |
| 10:05AM | 096103 | Anaerobic digestion of swine manure in conventional and hybrid pilot scale plants: performance and gaseous emissions reduction
Alessandro Chiumenti, Universita Di Udine, Udine 133100, Italy (A. Chiumenti, R.Chiumenti, F. da Borso, S. Limina) |
| 10:20AM | 097003 | Monitoring two on-farm anaerobic digesters in New York State for one year following the ASERTTI protocol - Final Results
Curt A. Gooch, Cornell Univ, Ithaca, NY (C.A. Gooch, P.L. Pronto, T.A. Shepherd) |
| 10:35AM | 096439 | Production of Biohydrogen, Methane and Electricity by Using the Modified Single-Chamber MFC
I-Chung Lo, National Taiwan University, Taipei, Taiwan Taiwan (I.-C. Lo, C.-Y. Chou) |
| 10:50AM | | Break |
| 11:00AM | 095774 | Piggery Manure Estimation for Methane Recovery
Claudiane M. Ouellet-Plamondon, University of Cambridge, Cambridge, United Kingdom (C.M. Ouellet-Plamondon, E.J. McGahan, P.J. Watts, A.S. Skerman, S. Birchall) |
| 11:15AM | 096775 | Producer gas production via biodrying – gasification of swine manure – corn stalks
Mahmoud A. Sharara, Univ of Arkansas, Fayetteville, AR (S. Sadaka, M. Sharara, H. Ahn) |
| 11:30AM | 096766 | Startup operations of a Farm-Scale Anaerobic Sequencing Batch Reactor (ASBR) treating low strength swine manure
Matthew T. Steele, Oklahoma State Univ, Stillwater, OK (M. Steele) |
| 11:45AM | 097455 | Anaerobic Digestion of Poultry Litter: A Review
Kaushendra Singh, The University of Georgia, Athens, GA (Presenter: John Worley; K. Singh, J. Worley, M. Risse) |
| 12:00PM | 097018 | A Web-based Gas Production Model for Plug-Flow Anaerobic Digesters
Jennifer L. Pronto, Cornell Univ, Ithaca, NY (J. Pronto, C. Gooch, K. Gebremedhin) |

Tuesday, June 23 – 9:30AM-12:30PM

- 211 **(ESH-03) ERGONOMICS AND HUMAN FACTORS (ESH-04)**
Moderator: Gary T. Roberson, North Carolina State Univ, Raleigh, NC
LOCATION: Nevada 11
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | 095646 | A Proposal to Study Additional Contributing Factors to the NIOSH Lifting Equation
William P. Campbell, Indiana State Univ, Terre Haute, IN (W.P. Campbell, K.A. Perry, E. Sheldon, F. Moayed) |
| 9:50AM | 096034 | Acoustic environment in climatized poultry houses
Flavio A. Damasceno, Universidade Federal de Vicosa, Vicosa, Minas Gerais Brazil (F.A. Damasceno, T. Yanagi Jr., R.C. Costa Gomes, S.R.P. Moraes, I.F.F. Tinoco) |
| 10:05AM | 097294 | Harvesting Aids for Reducing Ergonomics Risk Factors in Fruit Orchards
Victor Duraj, Univ of California Davis, Davis, CA (V Duraj, J A Miles, J M Meyers, J A Faucett, F Fathallah, R Elkins, D G Tejeda) |
| 10:20AM | | Break |
| 10:30AM | 097333 | Ergonomic Interventions for Dairy Cattle Feed Handling During Research
Brandon J. Miller, Univ of California Davis, Davis, CA (B.J. Miller, F.A. Fathallah) |

- 11:00AM 097336 **Fatigue Measurements of Cyclic and Prolonged Stooped Agricultural Work Using Electromyography**
Brandon J. Miller, Univ of California Davis, Davis, CA (D.S. Nou, B.J. Miller, F.A. Fathallah)
- 11:15AM 095696 **Bowtie Analysis of the Lawnmower Overturn Hazard**
Melvin L. Myers , Flowery Branch, GA (M. Myers)
- 11:30AM 096473 **Analysis of safety intervention bottlenecks in maintenance and repair of farm machinery and buildings**
Risto H. Rautiainen, Univ of Iowa, Iowa City, IA (T.E.A. Mattila, K.O. Kaustell, R.H. Rautiainen)

Tuesday, June 23 – 9:30AM-12:30PM

- 212 **(FPE-3) ADVANCES IN NONDESTRUCTIVE TESTING OF AGRICULTURAL, BIOLOGICAL, AND FOOD PRODUCTS (FPE-701)**
Moderator: Kevin M. Keener, Purdue Univ, West Lafayette, IN
LOCATION: Carson 1
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 096474 | NIR Calibration Model Updating Based on Slope/Intercept Analysis: A Case Study on Firmness Determination of Pears Harvested in Different Years
Xiaping Fu, Zhejiang Univ, Hangzhou, Hangzhou Peoples Republic of China (X. Fu, Y. Ying) |
| 9:50AM | 095749 | NIR Reflectance Spectroscopic Method for Nondestructive Moisture Content Determination of In-Shell Peanuts
Venkatkrishna Chari Kandala, USDA ARS, Dawson, GA (C.V.K. Kandala , G. Konda Naganathan and J. Subbiah) |
| 10:05AM | 096521 | Mid-Infrared Spectral Characterization of Aflatoxin Contamination in Peanuts
Hande Kaya-Celiker, Virginia Tech, Blacksburg, VA (Presenter: Kumar Mallikarjunan; H. Kaya-Celiker, K. Mallikarjunan, A. Kaaya) |
| 10:20AM | 096249 | Real-time Methods for Non-destructive Detection of Pits in Fresh Cherries
Eric Jackson, USDA ARS, Albany, CA (R.P. Haff, R. Young, J. Gomez, E.S. Jackson) |
| 10:35AM | 096753 | Wavelet Analysis of Ultrasound Echoes for Predicting Egg Shell Strength Characteristics
Govindarajan Konda Naganathan, Univ of Nebraska, Lincoln, NE (G.K. Naganathan, P. Chapain, I. Poudel, G.W. Froning, G.R. Bashford, G.E. Meyer, J. Subbiah) |
| 10:50AM | | Break |
| 11:00AM | 096192 | Ultrasonic Detection of Mango Pulp Weevil (Sternonchetus frigidus) Infestation
Meredith Anne C. Sotto, Univ of Philippines, Los Banos, Laguna Philippines (M.A.C. Sotto) |
| 11:15AM | 097016 | Prediction of Mandarin Orange Brix/Acid Ratio Using Multivariate Analysis of Magnetic Resonance Images
Rebecca R. Milczarek , Davis, CA (R.R. Milczarek, M.J. McCarthy) |
| 11:30AM | 097043 | Rapid and nondestructive determination of moisture content in peanut kernels from microwave dielectric measurements on whole pods
Samir Trabelsi, USDA ARS, Athens, GA (Presenter Stuart Nelson; S. Trabelsi, M. Lewis, S.O. Nelson) |
| 11:45AM | 095540 | Moisture influence on dielectric behavior of foods
Stuart O. Nelson, USDA ARS, Athens, GA (S.O. Nelson, S. Trabelsi) |
| 12:00PM | 095672 | Measurement of Soluble Solids Content of Intact Pear and Pear Juice using Vis/NIR Spectroscopy Technique
Yibin Ying, Zhejiang Univ, Hangzhou, Zhejiang, Peoples Republic of China (Presenter: Tong Sun; T. Sun, Y. Fan, Y. Liao, Y. Ying, R. Lacey, Y. Lan) |

Tuesday, June 23 – 9:30AM-12:30PM

- 213 **(FPE-9B) FOOD AND BIOPRODUCTS PROCESS MODELING (FPE-703)**
Moderator: Lope G. Tabil, Jr, Univ of Saskatchewan, Saskatoon, SK
Canada
LOCATION: Carson 2
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | 096250 | Simulation of a Forced-Air-Twin-Chamber for Measuring the Effect of Heat Treatment Uniformity
Jianbo Lu, McGill Univ , QC Canada (J. Lu, G.S.V. Raghavan, C. Vigneault, S.R.S. Dev) |
| 9:50AM | 096043 | Modeling of Fouling in a Bench-Scale Plate Heat Exchanger System During Milk Pasteurization
Virendra M. Puri, Penn State Univ, University Park, PA (H. O. Ozden, V.M. Puri) |
| 10:05AM | 096109 | Mathematical modeling of milk fouling in sterilizer
Ashis K. Datta, Indian Institute of Tech, Kharagpur, India (S. Acharya, A.K. Datta) |
| 10:20AM | 096632 | Modeling of Thermal Meat Cooking Process
Maria Nila L. Alban, Katholiecke Univ of Leuven, Leuven, Belgium (Presenter: Claudia Behr; M.N.L. Alban, S.E. Ozcan, T.B. Melo, M. Adams, K. De Boodt, H. Paelinck, D. Berckmans) |
| 10:35AM | 096600 | Effect of extrusion process variables on the product moisture content
Jaya Shankar Tumurluru, University of Saskatchewan, Saskatoon, SK Canada (T.J. Shankar, S. Sokhansari) |
| 10:50AM | | Break |
| 11:00AM | 096802 | Kinetics of surface color change during moist-air impingement processing of meat patties
Sanghyup Jeong, Michigan State Univ, East Lansing, MI (Presenter: Bradley Marks; S. Jeong, B.P. Marks) |



Technical Sessions



ASABE 2009 ANNUAL INTERNATIONAL MEETING - RENO, NEVADA USA

- 11:30AM 096545 **Optimal Experimental Design to Estimate Thermal Degradation Kinetic Parameters for Nutraceuticals in Intermediate-Moisture Foods**
Dharmendra K. Mishra, Michigan State Univ, East Lansing, MI
(Presenter: Kirk Dolan; D.K. Mishra, K.D. Dolan, J.V. Beck)
- 11:45AM 096498 **Modelling and Optimization of Drying Variables in Desiccant Air Drying of Aloe vera (Aloe barbadensis Miller)**
Pavuluri Srinivasa Rao, Indian Institute of Tech, Kharagpur, India (C.T. Ramachandra, P.S. Rao)

Tuesday, June 23 – 9:30AM-12:30PM

- 214 **(FPE-17) PHYSICAL AND CHEMICAL PROPERTIES OF BIORESOURCE PRODUCTS AND COPRODUCTS (FPE-707, FPE-701)**
Moderator: Radhakrishnan Srinivasan, Mississippi State Univ, Mississippi State, MS
LOCATION: Carson 3
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 095661 | DDGS Quality: Effects of Operational Parameters on the Chemical Composition of DDGS
Brian A. Wrenn, National Corn-to-Ethanol Research Center, Edwardsville, IL (B.A. Wrenn, E. Prout) |
| 9:50AM | 095842 | Drying Kinetics of DDGS Under Varying Solubles and Temperature Levels
Rumela Bhadra, South Dakota State Univ, Brookings, SD (R. Bhadra, S. Kannadhason, K. Muthukumarappan, K.A. Rosentrater) |
| 10:05AM | 095690 | Pelletization by Agglomeration of Wet Distillers Grains during Rotary Drum Drying
Kyle V. Probst, Purdue University, West Lafayette, IN (K.V. Probst, K.E. Ileleji) |
| 10:20AM | 095761 | A Comparison of Measurement Procedures Used to Determine the Bulk Density of Distillers Dried Grains with Solubles (DDGS)
Clairmont L. Clementson, Purdue Univ, Lafayette, IN (C. Clementson, K. Rosentrater, K.E. Ileleji) |
| 10:35AM | | Break |
| 10:45AM | 095844 | Effects of CDS and Drying Temperature Levels in the Flowability Behavior of DDGS
Rumela Bhadra, South Dakota State Univ, Brookings, SD (R. Bhadra, K.A. Rosentrater, Ph.D., K. Muthukumarappan, Ph.D.) |
| 11:00AM | 095567 | Effect of Elusieve Fractionation on Physical Properties of Distillers Dried Grains with Solubles (DDGS)
Kurt A. Rosentrater, USDA ARS, Brookings, SD (K.A. Rosentrater, R. Srinivasan) |
| 11:15AM | 095675 | On the performance of biobased carriers from distillers grains with soluble (DDGS)
Ruth L. Pinto, Purdue Univ, Lafayette, IN (R.L. Pinto, K.E. Ileleji) |
| 11:30AM | 096969 | Moisture sorption isotherms for torrefied biomass and biochar
Sudhagar Mani, Univ of Georgia, Athens, GA (S. Mani, M. Phanphanich) |

Tuesday, June 23 – 9:30AM-12:30PM

- 215 **(FPE-24A) CHALLENGES IN BIOMASS FEEDSTOCK LOGISTICS AND PROCESSING - PART 1 (FPE-709)**
Moderator: Alvin Ray Womac, Univ of Tennessee, Louisville, TN
LOCATION: Carson 4
- | | | |
|---------|--------|---|
| 9:35AM | 096660 | A Biomass Supply Logistics System
R Vance Morey, Univ of Minnesota, St Paul, MN (R.V. Morey, D.G. Tiffany, N. Kaliyan) |
| 9:50AM | 095896 | Operations at Satellite Storage Locations (SSL) to Deliver Round Bales to a Bioenergy Plant
John S. Cundiff, Virginia Tech, Blacksburg, VA (Presenter: Jason Rudd; J.S. Cundiff, R.D. Grisso) |
| 10:05AM | 095898 | Comminution Energy Consumption of Biomass in Knife Mill and its Particle Size Characterization
Venkata Sambasiva Prasad Bitra, Acharya N.G. Ranga Agricultural Univ, Andhra Pradesh, India (V.S. Bitra, A.R. Womac, C. Igathinathane, P.I. Miu, Y.T. Yang, S. Sokhansani) |
| 10:20AM | 095743 | Biomass Transportation Management System
Zewei Miao, Chinese Academy of Sciences, Beijing, Peoples Republic of China (Z. Miao, Y. Shastri, T. Grift, A. Hansen) |
| 10:35AM | 097021 | Integration of Feedstock Assembly System and Biorefinery Conversion Models for Cellulosic Ethanol Bioenergy Systems
David J. Muth, Jr, Idaho National Laboratory, Idaho Falls, ID (D. Muth, J. Abodeely, D. Wendt, D. Mccorkle, K. Bryden) |
| 10:50AM | | Break |
| 11:00AM | 097049 | Analyzing the Availability of Non-Woody Biomass Resources for Potential Pellet Production in Ireland
Anthony L. Nolan, University College Dublin, Belfield, Dublin 4 Ireland (A.L. Nolan, K.P. Mc Donnell, J.P. Carroll, G.J. Devlin) |
| 11:15AM | 097200 | Studies on Vibrating Chopped Straw and Switchgrass to Increase their Bulk Density
Pak Sui Lam, Univ of British Columbia, Vancouver, BC Canada (P. S. Lam, P. Y. Lam, S. Sokhansani, X. Bi, C.J. Lim, L.J. Naimi, A.R. Womac, S. Nayaran) |
| 11:45AM | 090014 | Evaluation of Energy Sorghum Packaging Methods for Storage and Transport
John D. Gibson, Texas A&M Univ, College Station, TX (J.D. Gibson, B. Hartley, S.W. Searcy, J.A. Thomasson, R. Sui) |

Tuesday, June 23 – 9:30AM-12:30PM

- 216 **(BE) BIOLOGICAL ENGINEERING DIVISION POSTER SESSION (BE-2)**
Moderator: Mary-Grace Danao, Univ of Illinois, Urbana, IL
LOCATION: Summit Pavilion
- | POSTER # | PAPER # | PRESENTATION TITLE |
|----------|---------|---|
| 21 | 096413 | Comparison of the Mechanisms of Inactivation of Bacillus Amyloliquefaciens Spores by High Pressure, Thermal, and Chemical Methods Using Rapid FTIR-ATR Techniques
Lu Liu, Univ of Tennessee, Knoxville, TN (L. (Shirley) Liu, X.P. Ye, C.J. Doona, F.E. Feeherry) |
| 22 | 096071 | Heparin affinity chromatography for purification of porcine reproductive and respiratory syndrome viruses
Jianzhong Hu, Virginia Tech, Blacksburg, VA (J. Hu, X.J. Meng, C. Zhang) |
| 23 | 097027 | Evaluation of immobilizing horseradish peroxidase and alcohol oxidase in PVA-AWP polymer for gas-phase biosensing
Kalpana N. Beesabathuni, Univ of Illinois, Champaign, IL (S.N. Beesabathuni, M.C. Danao) |
| 24 | 096303 | Development of Nano-Matrix Composed of Poly(&#949;-caprolactone) and Polyethylenimine Using electrocrosslinking system for Tissue engineering
Jong Hoon Chung, Seoul National Univ, Seoul, South Korea (J.H. Kim, P.-H. Chung, K.T. Lim, E.T. Lee, H.M. Son, Y.-H. Choung, C.-S. Cho, J.H. Chung) |
| 25 | 090027 | Development of a Perfusion Bioreactor System for Alveolar Bone Tissue Engineering
Jong Hoon Chung, Seoul National Univ, Seoul, South Korea (K.T. Lim, P.H. Choung, J.H. Kim, H.M. Son, H. Seonwoo, J.H. Chung) |
| 26 | 096435 | Effects of Low Intensity Ultrasound Stimulation on the Proliferation of Alveolar Bone Marrow Stem Cell
Jong Hoon Chung, Seoul National Univ, Seoul, South Korea (E.T. Lee, K.T. Lim, J.H. Kim, A.L. Im, H.M. Son, C.S. Cho, P.H. Choung, J.H. Chung) |
| 27 | 096396 | 3D measurement of the low-resistance shark body based on binocular vision
Xiangyou Wang, Shandong University of Technology, Zibo, Shandong China (X. Han, Y. Li, X. Wang, D. Zhang) |
| 28 | 097276 | Removal of phenolic compounds by adsorption on polymeric resins before protein purification
Georgia O.F. Barros, Texas A&M Univ, College Station, TX (G.O.F. Barros, S.L. Woodard, Z.L. Nikolov) |
| 29 | 097358 | Application of Hot Water and Homogenization Treatment for Ethanol Production from Corn Stover
Yuguang Zhou, Ohio State Univ, Wooster, OH (Y. Zhou, Y. Li, D. Li, Z. Mao) |
| 30 | 095979 | Enhanced ethanol production from carob extract by Saccharomyces cerevisiae
Ali Demirci, Penn State Univ, University Park, PA (I. Turhan, K. Bialka, A. Demirci, M. Karhan) |
| 31 | 095980 | Enhanced Lactic acid production from carob extract by Lactobacillus casei
Ali Demirci, Penn State Univ, University Park, PA (I. Turhan, K. Bialka, A. Demirci, M. Karhan) |
| 32 | 096102 | Experimental study on the liquefaction of corn stover and qualitative analysis of its products
Zhihui Mao, China Agricultural Univ, Beijing, Peoples Republic of China (Y. Zheng, L. Liang, T. Wang, C. Hao, Z. Mao) |
| 33 | 096443 | Effect of liquefying solvent and catalyst on dynamic mechanical properties of biomass-converted polyurethane foams
Zhihui Mao, China Agricultural Univ, Beijing, Peoples Republic of China (C. Hao, L. Liang, Y. Zheng, Q. Li, Z. Mao) |
| 34 | 097252 | Experimental study on the soil-conserving effects of polyurethane from liquefied corn stover
Tipeng Wang, North China Electric Power University, Beijing, China (Presenter: Zhihui Mao; T. Wang, C. Hao, L. Liang, Y. Zheng, Z. Mao) |
| 35 | 097008 | Removal of Indicator Organisms from Three-Stage Treatment Wetlands by Alternative Filter Media
Abby L. Johnson, Michigan State Univ, Lansing, MI (A.L. Johnson, T.M. Harrigan) |
| 36 | 096881 | Kure Beach Dune Infiltration System: Reducing Stormwater Bacteria Export in Direct Ocean Outfalls
William D. Price, North Carolina State Univ, Raleigh, NC (W.D. Price, M.R. Burchell III, W.F. Hunt III, G.M. Chescheir) |
| 37 | 096740 | Groundwater nitrate reduction in a riparian buffer enrolled in the NC Conservation Reserve Enhancement Program
Jacob D. Wiseman, North Carolina State Univ, Raleigh, NC (J.D. Wiseman, M.R. Burchell II) |
| 38 | 096057 | Simulating the Hydrology and Nutrient Dynamics of Riparian Buffers in North Carolina using Riparian Ecosystem Management Model (REMM)
Amey S. Tiliak, North Carolina State Univ, Raleigh, NC (A.S. Tiliak, M.R. Burchell II, M.A. Youssef) |
| 39 | 096344 | Effectiveness of Nitrate Reduction in Differing Riparian Widths
Tiffany L. Messer, North Carolina State University, Durham, NC (T.L. Messer, M.R. Burchell II) |
| 40 | 096301 | Reduction in Nitrogen Loads from a Large-Scale Wetland Restoration in Eastern North Carolina
James R. Etheridge, North Carolina State Univ, Raleigh, NC (J.R. Etheridge, M.R. Burchell II) |
| 41 | 095892 | Multiwalled carbon nanotube modified glassy carbon electrode for determination of pesticide residues
Xia Sun, Shandong Univ of Technology, Zibo, Shandong China (X. Sun, X. Wang) |
| 42 | 096370 | Detection of Prostate Cancer Biomarkers Using an Electronic Nose
Rebecca L. Martinez, Virginia Tech, Blacksburg, VA (R. Martinez, K. Mallikarjunan, E. Subbiah) |



Technical Sessions



ASABE 2009 ANNUAL INTERNATIONAL MEETING - RENO, NEVADA USA

- 43 090039 **Experimental Study on Solid State Anaerobic Digestion of Organic Waste for Methane Production**
Jiyong Zhu, Shandong Univ of Technology, Zibo, Shandong China (J. Zhu, F. Cui, Y. Li)
- 44 090040 **Selection of Microalgal Strains and Medium Optimization for High Density Culture (HDC) for CO2 Mitigation of Flue Gas**
Czarena L. Crofcheck, Univ of Kentucky, Lexington, KY (A. Kroumov, C. Crofcheck, M. Montross)

Tuesday, June 23 – 9:30AM-12:30PM

217 (ED-04) INSTRUCTIONAL ACTIVITIES FOR ENGAGING STUDENTS

- (ED-01, ED-206, ED-203)
Moderator: F Richard Beard, Utah State Univ, Logan, UT
LOCATION: Nevada 10
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | 095971 | Teaching Aquaculture Engineering: Addressing a Need
Fredrick W. Wheaton, Univ of Maryland, College Park, MD (F. Wheaton, J. Ebeling, M. Timmons) |
| 9:50AM | 095859 | So you Want to Write a Book?
Arthur T. Johnson, Univ of Maryland, College Park, MD (A.T. Johnson) |
| 10:05AM | 097397 | Learning OOP and Robotics applied to Agriculture
Recio Beatriz, Univ Politecnica de Madrid, Madrid, Madrid Spain (B. Recio, P. Barreiro, V. Mendez, B. Biedma) |
| 10:20AM | | Break |
| 10:30AM | 097314 | Exploring a Biological Systems Engineering and Food Science and Technology Dual Degree
David D. Jones, Univ of Nebraska, Lincoln, NE (S.L. Cuppett, C.L. Weller) |
| 10:45AM | 096608 | Challenges in redesigning food engineering curriculum
Parameswararum Mallikarjunan, Virginia Tech, Blacksburg, VA (P. Mallikarjunan, M.L. Wolfe, V.K. Lohani) |
| 11:00AM | 096570 | Orange Juice Evaporation Remote Laboratory 2nd Year Update
Jose Reyes-De-Corcuera, Univ of Florida, Lake Alfred, FL (A. Teixeira, T. Irani) |

Tuesday, June 23 – 9:30AM-12:30PM

218 AEM TROPHY COMPETITION TIPS & TRICKS (Panel Discussion) (P-125)

Moderator: John C. Yagow, John Deere Harvester Works, Kewanee, IL
LOCATION: Nevada 7

Has your club ever stopped to consider the benefits of participation in the AEM Student Trophy Competition? The report covers all activities; highlighting where your branch could make improvements and thereby better preparing students for their future. Furthermore, winning branches receive a traveling trophy, \$500, and bragging rights for the year! Come hear tips and tricks from experiences report writers and judges and get ready to join in the competition for 2010!

Tuesday, June 23 – 9:30AM-12:30PM

219 CHINA EXCHANGE (Invited Speakers) (AOCABFE, INTL-601)

Moderator: Lingjuan Wang, North Carolina State Univ, Raleigh, NC
LOCATION: Ruby 1&2
China Exchange is a jointly sponsored session by the American Society of Agricultural and Biological Engineers (ASABE) and the Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOCABFE). The purpose of the session is to provide a forum for sharing and exchanging visions, experiences, and new ideas for promoting and developing scholarly cooperation activities between the institutions or individuals in China and in other countries in the areas of agricultural, biological, and food engineering.

PRESENTATION TITLE

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | | TBA
Mr. Dong, Jianlong, Consul, The Consulate-General of P.R. China in San Francisco. |
| 9:55AM | | Status and Future of Corn Harvester in China
Dr. Chen Zhi, Chinese Society of Agricultural Machinery. |
| 10:15AM | | Cotton Production and Processing in China
Dr. Calvin Parnell, Cotton Chair and Regents Professor at Texas A&M University. |
| 10:35AM | | Break |
| 10:45AM | | Agricultural Machinery Cooperatives in China: Origin, Development, and Innovation
Mr. Li, ErChao, China Agricultural University. |
| 11:05AM | | Potential for Stormwater Management in China
Dr. Bill Hunt, Associate Professor at North Carolina State University. |
| 11:25AM | | Overview of English journals in China and Sino-US joint journal IJABE based on open access.
Dr. Wang, Yingkuan, Managing Editor & Journal Manager of International Journal of Agricultural & Biological Engineering (IJABE). |

Tuesday, June 23 – 9:30AM-12:30PM

220 (INTL-2A) ENGINEERING TECHNOLOGIES FOR THE DEVELOPING COUNTRIES - PART 1 (International)

- Moderator: Israel Sunday Dunmade, Mount Royal College, Calgary, Calgary, AB Canada
LOCATION: Whitney
- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 096515 | Recent advances in soil and water resources engineering research in the Philippines
Victor B. Ella, Univ of the Philippines Los Banos, Philippines (Presenter: Manual R. Reyes; V.B. Ella) |
| 9:50AM | 097062 | Impacts of changing climatic parameters on yields of rice, maize and cotton, and wheat cropping systems in Indian State of Punjab
Harsimran Kaur, Punjab Agricultural Univ, Ames, IA (H. Kaur, S.K. Jalota, M.P. Kaushal, R.S. Kanwar) |
| 10:05AM | 096668 | Optimum Tillage System for Pepper Production ALFISOL of Southwestern Nigeria
Emmanuel Atoo Ajav, Univ of Ibadan, Ibadan, Nigeria (T.M. Samuel, E.A. Ajav) |
| 10:20AM | 097430 | Experimentation of New Resource Conserving Technology in synergy with Micro Turbo based Canal Irrigation system
Anand K. Plappally, Ohio State Univ, Columbus, OH (A.K. Plappally, R.S. Tripathi, P.M.V. Subbarao, L.C. Brown, R.K. Gupta) |
| 10:35AM | 096320 | Rice Growth Monitoring Using RADARSAT Data in Pangasinan and Nueva Ecija, The Philippines
Manzul K. Hazarika, Asian Institute of Technology, Bangkok, Pathumthani Thailand (Presenter: Ganesh Bora; M.K. Hazarika, B.R. Parida, M. Magsud, B.C. Wilfredo, L.A. Sonia, B. Cheryll and G.C. Bora) |
| 10:50AM | | Break |
| 11:00AM | 097484 | Application of "SEA" to Agricultural Industry in Developing Countries
Kehinde Adedeji Adekola, Jilin Univ, Changchun City, Peoples Republic of China (K. Adekola) |
| 11:15AM | 096197 | An approach for Information and Communication Technology (ICT) Implementation and adoption for Education in Developing Countries
Elsa Susana Sepulveda, Univ of Florida, Gainesville, FL (E.S. Sepulveda Bustos, PhD) |
| 11:30AM | 096484 | Development and Testing of a Small Scale Cassava Chips Dryer
Akindele Folarin Alonge, Univ of Uyo , Nigeria (A.F. Alonge, I.I. Yakubu) |

Tuesday, June 23 – 9:30AM-12:30PM

243 NEW PRODUCTS (Invited Speakers)

See complete information for session 243 in numerical order

Tuesday Afternoon, June 23

Tuesday, June 23 – 2:30PM-5:00PM

221 ADVANCES IN COMMERCIAL AUTOMATED GUIDANCE SYSTEMS (Panel Discussion) (PM-58, PM-48)

Moderator: Shufeng Han, Deere & Co, Urbandale, IA
LOCATION: Carson 4

Assisted-steering and auto-steering for agricultural vehicles have become one of the most active areas in Ag equipment segment in recent years. Many commercial guidance products are currently available. The purpose of this invited session is to discuss the recent product development in auto-steering and guidance. Technical challenges and future direction in guidance technology will also be discussed. Invited speakers include experts from both Ag industry and academia.

Tuesday, June 23 – 2:30PM-5:00PM

222 (PM-9) MANAGEMENT TOOLS FOR PRECISION AGRICULTURE (PM-43, PM-54)

Moderator: Gary T. Roberson, North Carolina State Univ, Raleigh, NC
LOCATION: Carson 2

- | TIME | PAPER # | PRESENTATION TITLE |
|--------|---------|---|
| 2:30PM | | Introduction |
| 2:35PM | 097477 | Decision Support Modeling in Precision Agriculture
Ryan P. Goss, Univ of Illinois, New Berlin, IL (R. Goss, D. Bullock, L.F. Rodriguez) |
| 2:50PM | 096957 | Software Tool for Estimating Overlapped Areas in Agricultural Fields Operations
Rodrigo S. Zandonadi, Univ of Kentucky, Lexington, KY (R. S. Zandonadi, T. S. Stombaugh, J. D. Luck, S. A. Shearer) |
| 3:05PM | 096178 | Effects of Different Row Space on Corn Yield and Machinery Harvesting losses
Dongxing Zhang, China Agricultural University, Beijing, China (Liuja, Cuitao, Liyanlong, Prof. D. Zhang) |



Technical Sessions



ASABE 2009 ANNUAL INTERNATIONAL MEETING - RENO, NEVADA USA

Tuesday, June 23 – 2:30PM-5:00PM

TIME	PAPER #	PRESENTATION TITLE
223 (PM-2) PESTICIDE APPLICATION TECHNOLOGIES - LAB AND FIELD STUDIES (PM-23/6) Moderator: Harold W. Thistle, USDA FS, Morgantown, WV LOCATION: Carson 1		
2:30PM		Introduction
2:35PM	097453	Comparison of handgun and boom spray delivery systems for greenhouses Richard C. Derksen, USDA ARS, Wooster, OH (R.C. Derksen, C.M. Ranger, L.A. Canas, J.C. Locke, H. Zhu, C.R. Krause)
2:50PM	095748	Spray droplet spectrum from multiple sprays solutions and airspeeds and implications on spray drift Bradley K. Fritz, USDA ARS, College Station, TX (B.K. Fritz, W.C. Hoffmann, B.E. Bagley, Y. Lan)
3:05PM	096624	Effects of Atmospheric Stability on Aersol Spray April L. Hiscox, Louisiana State University, Baton Rouge, LA (A. Hiscox, D.R. Miller, M. Salyani, T. Walker, M. Farooq)
3:20PM	095831	Turbulent air assisted sprayer for low row crops. Gedalyahu Manor, Technion Israel Inst of Tech, Technion City, Israel (G. Manor, D. Dvorkin)
3:35PM	096257	Wind tunnel calibration of impaction drift samplers Bernard Panneton, Agriculture & Agri-Food Canada, St Jean-Sur-Richelieu, QC Canada (B. Panneton)
3:50PM		Break
4:00PM	096517	The Simulation of Fine Droplet Motion Using AGDISP Milton E. Teske, Continuum Dynamics Inc, Ewing, NJ (M.E. Teske, H.W. Thistle)
4:15PM	096196	Details of the CaPuff/AGDISP Interface Harold W. Thistle, USDA FS, Morgantown, WV (H. Thistle, J. Strager)
4:30PM	096675	Surfactant effects on evaporation time and wetted area of droplets Linyun Xu, Nanjing Forestry Univ, Nanjing, Jiangsu Peoples Republic of China (L. Xu, H. Zhu, H.E. Ozkan)
4:45PM	096671	Surfactant droplet evaporation and deposition patterns on waxy leaf surfaces Linyun Xu, Nanjing Forestry Univ, Nanjing, Jiangsu Peoples Republic of China (L. Xu, H. Zhu, H.E. Ozkan)

Tuesday, June 23 – 2:30PM-5:00PM

TIME	PAPER #	PRESENTATION TITLE
224 (SW-2) HYDROLOGIC AND WATER QUALITY MODELING: ADVANCES, CHALLENGES AND DIRECTIONS (SW-21) Moderator: Deva K. Borah, Woolpert Inc, Portsmouth, VA LOCATION: Nevada 1		
2:30PM		Introduction
2:35PM	096830	Modeling non-point source loads calibrated to different water quality sampling intervals and periods Remegio B. Confesor, Jr, Heidelberg College, Tiffin, OH (R.B. Confesor Jr., D. Baker, R.P. Richards, J. Kramer, G. Whittaker)
2:50PM	097368	Measurement Errors in Tipping Bucket Rain Gauges under Different Rainfall Intensities and their implication to Hydrologic Models Vinayak Shamrao Shedekar, Ohio State Univ, Columbus, OH (V.S. Shedekar, K.W. King, M. Heckel, L.C. Brown, N.R. Fausey, R.D. Harmel)
3:05PM	095554	Data Uncertainty Estimation Tool for Hydrology and Water Quality (DUET-H/WQ): Estimating Measurement Uncertainty for Monitoring and Modelling Applications R Daren Harmel, USDA ARS, Temple, TX (R.D. Harmel, D.R. Smith, K.W. King, R.M. Slade, P.K. Smith)
3:20PM	096567	Consideration of Measurement and Model Uncertainty in Calibration and Validation Patricia K. Smith, Texas A&M Univ, College Station, TX (R.D. Harmel, P.K. Smith, K.W. Migliaccio)
3:35PM	096261	Tool for Calculating Goodness-of-fit Values Considering Measurement and Model Uncertainties Kati White Migliaccio, Tropical Research & Education Center, Homestead, FL (K.W. Migliaccio, R.D. Harmel, P.K. Smith)
3:50PM		Break
4:00PM	096650	Quantifying Uncertainty of Sediment TMDLs Using a Stochastic Approach James K. Newman, Iowa State Univ, Ames, IA (J.K. Newman, A.L. Kaleita)
4:15PM	096591	Comparison of the HSPF and HBV-INCA Models: Crossing the Atlantic Divide Rebecca W. Zeckoski, Univ of Cambridge, Cambridge, United Kingdom (R. Zeckoski, A. Lazar, D. Liang, A. Wade)
4:30PM	095943	Landscape scale effects on surface losses from manure application methods Tamie L. Veith, USDA ARS, University Park, PA (T.L. Veith, F. Shigaki, P.J.A. Kleinman, D.B. Beegle)
4:45PM	097167	Evaluation of temporal resolution of land use/land cover (LULC) data on SWAT model outputs Naresh Pai, Univ of Arkansas, Fayetteville, AR (N. Pai, D. Saraswat)
5:00PM	096176	Development of Web-based Load Duration Curve for Analysis of TMDL and Water Quality Characteristics Jong Gun Kim, Kangwon National Univ, Kangwondo, South Korea (J. Kim, B.A. Engel, Y.S. Park, W.S. Jang, D.S. Yoo, K.S. Kim, K.J. Lim)

Tuesday, June 23 – 2:30PM-5:00PM

TIME	PAPER #	PRESENTATION TITLE
225 (SW-6/BE-5) LOW IMPACT DEVELOPMENT (SW-21, BE-22) Moderator: William F. Hunt, III, North Carolina State Univ, Raleigh, NC LOCATION: Nevada 2		
2:30PM		Introduction
2:35PM	095698	Alternative Site-Assessment Hydrologic Metrics for Urban Development Kathy M. DeBusk, North Carolina State Univ, Cary, NC (K. DeBusk, Dr. B. Hunt)
2:50PM	097369	Monitoring Sustainable Development: the Remote Data Acquisition Network at Bannockburn Plantation Daniel R. Hitchcock, Clemson Univ, Georgetown, SC (D.R. Hitchcock, W.H. Conner, T.M. Williams, A.D. Jayakaran, S. Esswein, B. Song)
3:05PM	095795	Effects of Media Depth on Bioretention Performance in the Upper Coastal Plain of North Carolina and Bioretention Construction Impacts Study William F. Hunt, III, North Carolina State Univ, Raleigh, NC (R.A. Brown, Dr. W.F. Hunt III)
3:20PM	097055	Improving water quality and reducing the volume of urban stormwater runoff with a bioretention area Fouad H. Jaber, Texas A&M Univ, Richardson, TX (F.H. Jaber, E.R. Guzik)
3:35PM		Break
3:45PM	096995	Simulation of Rock Infiltration Systems Bruce N. Wilson, Univ of Minnesota, St Paul, MN (B. Wilson, A. Sheshukov, A. Mendez)
4:00PM	096025	Field Evaluation of Level Spreader - Vegetated Filter Strips to Improve Hydrology and Water Quality Ryan J. Winston, North Carolina State Univ, Raleigh, NC (R.J. Winston, W.F. Hunt)
4:15PM	097041	A cost effective and easily implemented constructed wetland solution for reducing phosphorous from urban stormwater, field-scale results presented Shawn E. Rosenquist, Virginia Tech, Christiansburg, VA (S.E. Rosenquist, D.H. Vaughan, W.C. Hession)
4:30PM	096175	Development of LID Application Module in the L-THIA and SWMM Models Junho Park, Kangwon National University, Chuncheon, Gangwon South Korea (J.H. Park, W.S. Jang, B.A. Engel, D.S. Yoo, Y.S. Park, J. Kim, K.J. Lim)

Tuesday, June 23 – 2:30PM-5:00PM

TIME	PAPER #	PRESENTATION TITLE
226 (SW-9) HYDROLOGY AND WATER QUALITY OF FOREST AND WETLAND ECOSYSTEMS - PART 1 (SW-21, SW-22, SW-23, BE-22, T-12) Moderator: Sanjay Shukla, Univ of Florida, Immokalee, FL LOCATION: Nevada 3		
2:30PM		Introduction
2:35PM	095866	SWAT-REMM linked approach for estimating water quality benefits of riparian forest buffers in the Little River watershed Jae-Pil Cho, USDA-ARS-SEWR, Tifton, GA (Presenter: David Bosch; J. Cho, R. Lowrance, D. Bosch, T. Strickland, G. Vellidis, K. Lim)
2:50PM	096737	Simulating Forest BMP Sediment Load Reductions in the Southeast Using WEPP Mark Dougherty, Auburn Univ, Auburn, AL (Presenter: Anurag Srivastava; M. Dougherty, A. Srivastava, J. Grace III)
3:05PM	097033	Impacts of land use changes associated with biofuels on water quality in Upper White River Basin Shashank Singh, Purdue University, West Lafayette, IN (S. Singh, I. Chaubey)
3:20PM	097177	Soil and Water Issues in Biofuel Forest Operations Johnny M. Grace, III, U.S. Forest Service, Southern Research Station, Evergreen, AL (J. McFero Grace III, Z. Leggett)
3:35PM	096860	Impacts of Woody Biomass Utilization on Watershed Resources William John Elliot, USDA FS, Moscow, ID (W. Elliot)
3:50PM		Break
4:00PM	096348	Simulated Effects of Wetland Restoration on Water Quantity and Quality at Watershed Scale Xixi Wang, Energy & Env Research Ctr, Stephenville, TX (X. Wang, W. Yang, S. Gabor, S. Shang)
4:15PM	097226	Effects of water retention on nitrogen and phosphorus loadings from two drained wetlands in the Lake Okeechobee Basin Debashish Goswami, Univ of Florida, Fort Myers, FL (Presenter: Sanjay Shukla; D. Goswami, S. Shukla, J.M. Knowles, W.D. Graham)
4:30PM	097204	Using heterogeneous vegetation to improve the hydraulic efficiency of constructed wetlands Mark D. Wahl, Ohio State Univ, Columbus, OH (M. Wahl, B. Dong, L. Brown, X. Li, X. Wei)
4:45PM	097461	Simulation Analysis of Flow Hydraulics in Constructed Wetland Basins Xiaohua Wei, Ohio State Univ, Columbus, OH (X. Wei, L.C. Brown, A.K. Plappally, Z. Mao, X. Wang, B. Dong)
5:00PM	096720	Characterization of Instrumented Field Sites for the Reforestation of Steep Reclaimed Mine Slopes Eric C. Drumm, Univ of Tennessee, Knoxville, TN (P. White, I. Jeldes, E.C. Drumm, J.S. Schwartz, A. Johnson)



Technical Sessions



ASABE 2009 ANNUAL INTERNATIONAL MEETING - RENO, NEVADA USA

Tuesday, June 23 – 2:30PM-5:00PM

227		(SW-17) SOIL EROSION RESEARCH (SW-223) Moderator: Niels G. Svendsen, US Army Corps of Engineers, Champaign, IL LOCATION: Nevada 4
TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	096445	Improving Frost Simulation Subroutines of the Water Erosion Prediction Project (WEPP) Model Shuhui Dun, Washington State Univ, Pullman, WA (S. Dun, J.Q. Wu, D.K. McCool, J.R. Frankenberger, D.C. Flanagan)
2:50PM	097022	Landscape Changes and Vegetation Restoration in the Wind-Water Crisscross Region of the Loess Plateau, China Jun Fan, Utah State University, Logan, UT (J. Fan, M. Shao, Q. Wang, S. Li, S.B. Jones)
3:05PM	095803	Study on Dynamic Simulation method of Soil Erosion Model of Watershed System Peiling Gao, Shandong University of Tech, Zibo, China (P. Gao)
3:20PM	097271	Study on prediction model of the runoff-sediment yield process for single rainstorm in representative small drainage basin Tingwu Lei, China Agricultural Univ, Beijing, Peoples Republic of China (C. Yuan, T. Lei)
3:35PM	097441	Raindrop Characteristics in Southeastern Washington Donald K. McCool, USDA ARS PWA, Pullman, WA (D.K. McCool, J. D. Williams, J. R. Morse)
3:50PM		Break
4:00PM	096194	Communitativity of Sediment Yield and Runoff Resulted from Different Grass Strip Position Configurations Chia Chun Wu, Natl Pingtung Univ of Science & Tech, Kaohsiung, Taiwan (C.-C. Wu, T.-W. Wang, C.-Y. Yang, Y.-T. Chan, P.-C. Chian)
4:15PM	096458	WEPP Snow Simulation—The Impact of Snow-Rain Partition on Snowmelt Prediction for Lake Tahoe Basin Joan Q. Wu, Washington State Univ, Pullman, WA (S. Dun, J.Q. Wu, W.J. Elliot, E. Brooks, J. Boll)
4:30PM	096528	Challenge to Support Practice Factor in USLE-type Platform Chia Chun Wu, Natl Pingtung Univ of Science & Tech, Kaohsiung, Taiwan (C.-C. Wu, T.-W. Wang, P.-C. Chian, C.-Y. Yang, Y.-T. Chan)
4:45PM	096645	Field Investigation of Compost Blankets for Erosion Control under Concentrated Flow Conditions Xianben Zhu, Univ of Georgia, Athens, GA (X. Zhu, M.L. Risse)

Tuesday, June 23 – 2:30PM-5:00PM

228		(SW-24) MONITORING AND MODELING OF PATHOGENS AND EMERGING CONTAMINANTS (SW-224, SW-21, BE-22) Moderator: Michelle L. Soupir, Iowa State Univ, Ames, IA LOCATION: Nevada 5
TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	096704	Fate and Transport of Rotavirus in Surface and Near-Surface Soil-Water Interactions Paul C. Davidson, Univ of Illinois, Urbana, IL (P.C. Davidson, D.J. Koch, P.K. Kalita, M.S. Kuhlenschmidt, T.B. Kuhlenschmidt)
2:50PM	096239	E. coli Sorption to Soils: The Influence of Organic Matter and Clay Content Jorge A. Guzman, Oklahoma State Univ, Stillwater, OK (J. Guzman, G. Fox, C. Penn)
3:05PM	096336	Transport of tylosin resistant fecal indicators from agricultural lands receiving swine manure Trang T. Hoang, Iowa State Univ, Ames, IA (T. Hoang, M. Soupir, A. Bhandari)
3:20PM	096566	Surface and Near-Surface Pathogen Transport in Small-Scale Soil Bed Experiments Daniel J. Koch, Univ of Illinois, Urbana, IL (D.J. Koch, P.C. Davidson, P.K. Kalita, M.S. Kuhlenschmidt, T.B. Kuhlenschmidt)
3:35PM	096662	Fate and Transport of E. coli in Cedar Creek Watershed, Texas Reema Padia, Texas A&M University, College Station, TX (R. Padia, I. Parker, B. Sullivan, R. Karthikeyan, S. Mukhtar)
3:50PM		Break
4:00PM	096313	Dissemination of Fecal Coliform in Juniper Creek Watershed, NW Florida Kenya A. Rolle, Florida Agr & Mech Univ, Tallahassee, FL (Presenter: Margaret Gitau; K. Rolle, M. Gitau, G. Chen)
4:15PM	097373	Role of macropores on pathogen transport: Field experiments Chi Kim Hoang, Iowa State Univ, Ames, IA (C. Hoang, G. Fox, R. Kanwar, R. Malone, J. Guzman)
4:30PM	096903	The Effect of a Distillers' Grain Diet on Bacterial Antibiotic Resistance in Cattle Feedlots Jason R. Vogel, USGS, Lincoln, NE (J. Vogel, L. Fogarty, J. Gilley, J. Wells, E. Berry, B. Woodbury)
4:45PM	090036	Removing Poultry Pharmaceuticals in Agricultural Runoff with a Constructed Wetland Syed Azfar Hussain, McGill University, Ste Anne De Bellevue, QC Canada (S.A. Hussain, S.O. Prasher, R. Patel)
5:00PM	097074	Monitoring the fate and transport of vinasse chemical components applied to different soil types Jarbas H. Miranda, ESALQ/USP, Piracicaba, SP Brazil (J.A. Lelis, J.H. de Miranda, M.T. van Genuchten, M.Y. Kamogawa, G.B. Grigolon)

Tuesday, June 23 – 2:30PM-5:00PM

229		(SW-29) INNOVATIONS IN DRAINAGE RESEARCH (SW-23) Moderator: George M. Chescheir, North Carolina State Univ, NC LOCATION: Nevada 6
TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	096314	Drainage Coefficients for Optimum Drainage Design in Illinois Greg E. Goodwin, Univ of Illinois, Flat Rock, IL (Dr. R. Cooke, S. Verma)
2:50PM	090013	Predicting Transient Drainage Processes with Steady State Equations Richard Wayne Skaggs, North Carolina State Univ, Raleigh, NC (R.W. Skaggs)
3:05PM	096691	Field Evaluation of Methods for Predicting the Lateral Effect of a Drainage Ditch on Wetland Hydrology Brian D. Phillips, North Carolina State Univ, Cary, NC (B.D. Phillips, R.W. Skaggs, G.M. Chescheir)
3:20PM	096997	A Simple Method to Measure the Flow Rate and Volume from Tile Drainage Pump Stations Thomas F. Scherer, North Dakota State Univ, Fargo, ND (T. Scherer, X. Jia)
3:35PM	096564	Drainage Flow under Submerged Outlet Conditions Siddhartha Verma, Univ of Illinois, Urbana, IL (S. Verma, R.A. Cooke, G.E. Goodwin)
3:50PM		Break
4:00PM	097235	The Effects of Drainage Water Management on Crop Yields Chad A. Poole, North Carolina State Univ, Belhaven, NC (C.A. Poole, C. Crozier, M. Youssef, G.M. Chescheir, R.W. Skaggs)
4:15PM	097464	Simulated effects of drainage water management on crop yield under dry conditions Mohamed A. Youssef, North Carolina State Univ, Raleigh, NC (M.A. Youssef, R.W. Skaggs, C. Poole, G.M. Chescheir)
4:30PM	096774	SSURGO-Based Subsurface Drainage Estimates at Any Scale Jessica J. Prenger Bhalerao, Waterborne Environmental Inc, Savoy, IL (Presenter: Luke Zwilling; J. Prenger Bhalerao, P.S. Miller, C.M. Harbour)
4:45PM	090041	Scientific Research Results as the Basis for Estimation of Agricultural Influence on Water Contamination with Nitrogen Milan Mesic, Agronomski Fakultet, Zagreb, Croatia (M. Mesic, F. Basic, I. Kiscic, Z. Zgorelec, I. Vukovic, K. Sajko, A. Jurisic)

Tuesday, June 23 – 2:30PM-5:00PM

230		(SW-42) IRRIGATION MANAGEMENT AND WATER CONSERVATION (SW-244) Moderator: Freddie Lamm, Kansas State Univ, Colby, KS LOCATION: Nevada 7
TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	095539	Sustaining Irrigated Agriculture in Arid Areas: Lessons Learned in the San Joaquin Valley James E. Ayars, Water Management Res Lab, CA (J.E. Ayars)
2:50PM	097194	Deficit Irrigation of Alfalfa for Water Conservation Khaled M. Bali, Univ of California, Holtville, CA (K.M. Bali, B.R. Hanson, F. Kamand, A. Suleiman, D.H. Putnam, R.L. Snyder, J. Guerrero, E. Natwick, E. Takele)
3:05PM	095933	Shallow Water Table Contribution to Soil-Water Retention in the Capillary Fringe of a Very Gravelly Loam Soil of South Florida Luis P. Barquin, Univ of Florida, Homestead, FL (L. Barquin, K. Migliaccio, R. Muñoz-Carpena, B. Schaffer, J. Crane)
3:20PM	090009	A Coordinated Oregon Program for Managing and Conserving Water and Energy in Irrigated Agriculture David Dishman, USDA NRCS, Portland, OR (D. Dishman, J.R. Busch, M. English)
3:35PM	095885	Crop Water Productivity as Influenced by Irrigation Improvement in the Nile Delta Abdrabbo A. Abou Kheira, Kansas State Univ-NWREC, Colby, KS (A.A. Abou Keira)
3:50PM		Break
4:00PM	095560	Effects of Water and Fertilizer Stress on Yield, Fresh and Dry Matter Production of Leafy Amaranth (Amaranthus cruentus) Kamoru Akanni Adeniran, Univ of Ilorin, Ilorin, Kwara, Nigeria (Dr. K.A. Adeniran, Dr. C.J. Ejiji)
4:15PM	095700	Amaranthus cruentus Growth and Crop Cover Predictions in a Tropical Environment using a Water Simulation Model (WaSim) Dr Johnson Fasinmirin, Department of Agricultural Engineering, Fed. Univ of Technology, Akure, Nigeria, Akure, Nigeria, Nigeria (J.T. Fasinmirin, A.A. Olufayo)
4:30PM	097156	Evapotranspiration and Consumptive Irrigation Requirements for Washington Troy Peters, Washington State Univ, Prosser, WA (L. Nelson)
4:45PM	096622	Improving Water Use Efficiency Using Partial Root Drying Technique (Case study: Soybean) Mahdi Sarai Tabrizi, Tehran, (H. Babazadeh, M. Parsinezhad)
5:00PM	097425	Estimation of irrigation water conduction losses in four rivers of the Laja system in Central Chile Jose Luis Arumi R, Universidad De Concepcion, Chillan, Chile (J.L. Arumi, D. Rivera, A. Rougier, R. Diaz)



Tuesday, June 23 – 2:30PM-5:00PM

231 INFORMATION AND ELECTRICAL TECHNOLOGIES DIVISION POSTER SESSION

(IET-17) Electromagnetics and Spectroscopy Technical
 Moderator: Colm O'Donnell, Univ College Dublin, Belfield, Dublin, Ireland (IET-348)
(IET-2) Advances in Soft Computing
 Moderator: Yanbo Huang, USDA ARS JWDSRC APTRU, STONEVILLE, MS (IET-217)
(IET-4) Advances in Computational Methods, Simulations, and Applications
 Moderator: Tamie L. Veith, USDA ARS, University Park, PA (IET-217)
 LOCATION: Summit Pavilion

- | POSTER # | PAPER # | PRESENTATION TITLE |
|----------|---------|--|
| 1 | 095990 | Model for Characteristics of Corn through Low Temperature Vacuum Drying
Yubin Lan, USDA ARS, College Station, TX (W. Wu, Y. Lan, L. Yin) |
| 2 | 095888 | Plant Disease Stress Detection and Diagnosis Based on Theory of Acoustic Holography
Shifeng Yang, Tianjin Univ of Science & Technology, Tianjin, Peoples Republic of China (S. Yang, X. Wang, J. Zhao, J. Guo) |
| 3 | 096574 | Evaluation of Net Radiation models in a Surface Energy Balance to estimate Evapotranspiration
Luis Octavio Lagos, Univ of Concepcion, Chillan, Chile (L.O. Lagos, D.L. Martin, S. Irmak, S. Verma and A. Suyker) |
| 4 | 096412 | Three-Dimensional Visualized Simulation for Plant Roots System Competitive Growth
Nan Zhong, South China Agricultural Univ, Guangzhou, Peoples Republic of China (N. Zhong, J. Xiong, X. Luo) |
| 5 | 096410 | Modeling of the Influence of Soil Mechanical Resistance on Soybean Roots System
Nan Zhong, South China Agricultural Univ, Guangzhou, Peoples Republic of China (L. Yang, H. Mo, D. Wu) |
| 6 | 096630 | Bayesian model averaging for accounting for model selection uncertainty with an application for predicting net radiation
Christopher H. Hay, University of Nebraska-Lincoln, Brookings, SD (C.H. Hay, S. Irmak) |
| 7 | 095972 | Technical Development and Applications of Soft Computing in Agricultural and Biological Engineering
Yanbo Huang, USDA ARS JWDSRC APTRU, Stoneville, MS (Y. Huang, Y. Lan, S. J. Thomson, A. Fang, W. C. Hoffmann, R. E. Lacey) |
| 8 | 097428 | Optimal Wavelengths Selection Using Hierarchical Evolutionary Algorithm for Prediction of Firmness and Soluble Solids Content in Apples
Min Huang, Jiangnan Univ, Jianguo, Peoples Republic of China (Presenter: Renfu. Lu; M. Huang, R. Lu) |
| 9 | 097325 | Using Experts to Validate an Animal Specific Heat Stress Model for Feedlot Cattle
David D. Jones, Univ of Nebraska, Lincoln, NE (T. Brown-Brandt) |
| 10 | 097207 | Multidimensional Tool for the Visualization of Spatiotemporal Variability in Soil Moisture
Brett Nekolny, Iowa State Univ, Ames, IA (B. Nekolny, J. Goering, K. Crawford, A. Kaleita, E. Winer) |
| 11 | 096547 | Modeling Unknown Relationships with Polynomial Networks
Dennis G. Watson, Southern Illinois Univ, Carbondale, IL (D.G. Watson) |
| 12 | 096222 | Surface-enhanced Raman Scattering Spectroscopy for Rapid Bacterial Screening
Kuanglin Chao, USDA ARS ISL, Beltsville, MD (K. Chao, Y. Liu, M.S. Kim) |
| 13 | 097211 | Dielectric Measurement of Ions in Soil Solutions
Giorgi Chighladze, Iowa State Univ, Ames, IA (C. Giorgi, K. Amy, B. Stuart) |
| 14 | 096475 | Quantitative analysis of fruit firmness by near infrared spectroscopy and least-squares support vector machine
Xiaping Fu, Zhejiang Univ, Hangzhou, Hangzhou Peoples Republic of China (X. Fu, Y. Ying) |
| 15 | 095742 | Characterization of olive accessions using magnetic resonance techniques
Seong-Min Kim, Chonbuk National Univ, Chonju, South Korea (S. Kim, E. Stover, J. Hansen, M. McCarthy) |
| 16 | 096541 | Measurement of LAI in the Watershed Using Terra-ASTER Data
Masahiro Seguchi, Saga, Japan (M. Seguchi, M. Koriyama, Y.H. Shin) |
| 17 | 096456 | Nondestructive Determination of Soluble Solids Content in Watermelon Using Vis/NIR Diffuse Transmittance
Haiping Tian, Zhejiang Univ, Hangzhou, Zhejiang Peoples Republic of China (H. Tian, Y. Ying, H. Xu, L. Xie) |
| 18 | 096021 | Line-Scan Raman Imaging for Safety Inspection of Fresh Produce
Chun-Chieh Yang, USDA ARS, Beltsville, MD (C.-C. Yang, K. Chao, M.S. Kim) |
| 19 | 096004 | Comparison of airborne multispectral and hyperspectral imagery for mapping cotton root rot
Chenghai Yang, USDA-ARS, Weslaco, TX (C. Yang, C.J. Fernandez, J.H. Everitt) |
| 20 | 097146 | A frequency-response permittivity sensor
Naqian Zhang, Kansas State Univ, Manhattan, KS (N. Zhang, N. Tang, S. Schultz, D. Oard) |
| 21 | 096060 | A Vision-based Guidance System of Agricultural Vehicle
Bo Zhao, Chinese Academy of Agricultural Mechanization, Beijing, China (B. Zhao, Z. Zhu, Z. Song, E. Mao, X. Zhang) |
| 22 | 096376 | Estimation of sugar content and firmness of melon using VIS/NIR spectroscopy techniques
Young-Tae Kim, Chonnam National Univ, Gwangju, Bukgu South Korea (Y.-T. Kim, S.-R. Suh, K.H. Lee) |

- | | | |
|----|--------|--|
| 23 | 095893 | Nondestructive Measurement Internal Quality of Fruits by Reflectance and Transmittance NIR Spectroscopy
Liu Yande, Jiangxi Agricultural University, Nanchang, Jiangxi China (X. Sun, Y. Liu) |
| 24 | 096394 | Monitor of tomato growth condition in greenhouse based on a spectroscopy-based detector
Minzan Li, China Agricultural Univ, Haidian, Peoples Republic of China (M. Li) |
| 25 | 095547 | A Study on Vegetation Division in Northern Shannxi of Loess Plateau based on MODIS image data
Aidi Huo, Changan Univ, Xi'an, Shanxi China (A. Huo, G. Wang, Z. Liu, Z. Sun, Y. Qin) |
| 26 | 096407 | Application of a Wireless Sensor in Crop Growth Monitor
Minzan Li, China Agricultural Univ, Haidian, Peoples Republic of China (X. Li, M. Li, Di, Cui, S. Zhang) |
| 27 | 096403 | Detection of the Crop Growth Status Using Multi-Spectral Camera
Minzan Li, China Agricultural Univ, Haidian, Peoples Republic of China (Z. Zhang, M. Li, R. Zhao, W. Yang, S. Zhang) |
| 28 | 095968 | Study of a plant electrophysiological signals acquisition and analysis system with Fortunella
Yi-Chieh Chiu, National Ilan Univ, Ilan, Taiwan (Y. C. Chiu, K. H. Hsu, S. Y. Chung) |
| 29 | 097063 | Design of a Communications System Between Multiple Autonomous Vehicles
Steven G. Hall, P.E., Louisiana State Univ, Baton Rouge, LA (S.G. Hall, D.D. Smith, T. Davis) |
| 30 | 097230 | Development of methods to measure ozone concentrations in the soil
Shaun F. Kelly, Cal Poly State Univ, San Luis Obispo, CA (S.F. Kelly, R. Hurtado) |
| 31 | 097221 | Development and Performance of RFID Containers for the Nursery Industry
Shaun F. Kelly, Cal Poly State Univ, San Luis Obispo, CA (S.F. Kelly, T. Freed, B. Rahrer) |
| 32 | 095727 | A lot aggregation optimization model for minimizing food traceability effort
Maitri Thakur, Iowa State Univ, Ames, IA (M. Thakur, L. Wang, C.R. Hurburgh) |
| 33 | 097278 | A Real-time Automated System for Monitoring Feed Intake and Body Weight of Individual Turkeys Housed in Group
Xuyong Tu, Iowa State Univ, Ames, IA (X. Tu, S. Du, L. Tang, H. Xin) |

Tuesday, June 23 – 2:30PM-5:00PM

232 STRUCTURES AND ENVIRONMENT DIVISION POSTER SESSION
(SE-23) Agricultural Waste Management - Part 2
 Moderator: Peter E. Wright, NCRS, Syracuse, NY (SE-412, SW-263)
(SE-15) Air Quality as Related to Agricultural Waste Management - Part 1
 Moderator: Kaushlendra Singh, The University of Georgia, Athens, GA (SE-305, SE-412, SW-263)
 LOCATION: Summit Pavilion

- | POSTER # | PAPER # | PRESENTATION TITLE |
|----------|---------|---|
| 35 | 095993 | Volatile Organic Carbons in Suspended Particulate Matter from Broiler House: Examination of Filtration Conditions and Materials
Nanh Lovanh, USDA ARS, Bowling Green, KY (N. Lovanh, J. Loughrin, K. Sistani) |
| 36 | 090048 | Simulation of Ammonia Losses from Manure Land Application with a Wind Tunnel
Guoliang Qu, Q&Q AirTech Engineering Inc., Edmonton, AB Canada (G. Qu, A. Atia, L. Kryzanowski, L. Paperworth, I. Edeogu, K. Au, D. Slingerland) |
| 37 | 097187 | Emission Reduction by Brown Coal Powder
Werner Berg, Institute of Agricultural Engineering Bornim (ATB), Potsdam Brandenburg, Germany (Presenter: Simone Kraatz; W.E. Berg; S. Kraatz) |
| 38 | 096134 | Field Olfactometry for Odor-Related Decision-Making
Robin C. Brandt, Penn State Univ, University Park, PA (R.C. Brandt, H.A. Elliott, A. Adviento-Borbe, and E.F. Wheeler) |
| 39 | 096059 | Environmental Impacts of Mink Manure and Poultry Litter Stockpiling on Air Quality and Water Quality
Charlotte A. Sullivan, Nova Scotia Agricultural College, Truro, NS Canada (C. Sullivan) |
| 40 | 096161 | EMI-Sensor Data to Identify Areas for Potential VFA Emissions from Feedlot Surface
Bryan L. Woodbury, USDA ARS, Clay Center, NE (B. L. Woodbury, R.A. Eigenberg, V. Varel, M. Spiehs) |
| 41 | 097281 | Quantification of key odorants from animal feeding operations
Lingshuang S. Cai, Iowa State Univ, Ames, IA (L. Cai, S. Zhang, J. Koziel, S. Eischeid, L. Jacobson, S. Hoff, A. Heber, D. Parker) |
| 42 | 095684 | Characterization of Layer Manure in California High-Rise Houses
Hamed M. El-Mashad, Univ of California, Davis, CA (H.M. El-Mashad, J. Fadel, R. Zhang, X. Lin, B. Zhu, T. Rumsey) |
| 43 | 097269 | Evaluation of Ventilation Fan Performance in Broiler Houses
XingJun Lin, Univ of California Davis, Davis, CA (X.J. Lin, R. Zhang, B. Zhu, S. Jiang, A. Heber) |
| 44 | 096453 | Measurement of Ventilation Rate in High-Rise Layer Houses
XingJun Lin, Univ of California Davis, Davis, CA (X.J. Lin, R. Zhang, S. Jiang, E. Cortus, A. Heber) |
| 45 | 096455 | Ventilation and Environmental Monitoring of Broiler Houses in California
XingJun Lin, Univ of California Davis, Davis, CA (X.J. Lin, R. Zhang, S. Jiang, E. Cortus, A. Heber) |
| 46 | 095886 | Downstream placement of FANS to determine fan performance in situ
Hongwei Xin, Iowa State Univ, Ames, IA (H. Xin, H. Li, S. Li, R. Burns) |



Technical Sessions



ASABE 2009 ANNUAL INTERNATIONAL MEETING RENO, NEVADA USA

- 47 096363 **Broilers' Walking Ability Assessment**
Irenilza A. Naas, Univ de Campinas-UNICAMP, Campinas SP 18 081-970, Brazil (I.A. Nääs, M.S. Baracho, D.D. Salgado, D.J. de Moura)
- 48 097216 **Weight Gain of Broilers Chickens Using Images Analysis**
Cristina A. Mogami, Universidade Federal de Vicosa, Vicosa, Brazil (C.F. Souza, I.F.F. Tinoco, K.S. Oliveira Rocha, N.S. Machado, M.M. Bueno)
- 49 096707 **Nocturnal Behavior of Broiler Chickens in Commercial Sheds - Analysis Using Digital Images**
Cristina A. Mogami, Universidade Federal de Vicosa, Vicosa, Brazil (C.F. Souza, I.F.F. Tinoco, K.S. Oliveira Rocha, N.S. Machado, M. M. Bueno)
- 50 096562 **'Mice In Space': evaluation of a new housing system**
Daniel A. Berckmans, Katholieke Univ Leuven, Leuven, Belgium (M. Silva, Y. Liu, N. Serrad, M. Salanova, C. Touma, M. Jamon, D. Blotter, R. Cancedda, A. Giulliani, F. Rustichelli, J.-M. Aerts, L. Vico, R. D'Hooge, G. Falchetti, D. Berckmans)
- 51 097419 **Characterization of Physical and Optical Properties of Cattle Hair Coat**
Kamil Bojanczyk, Cornell Univ, Ithaca, NY (Presenter: Kifle Gebremedhin; K. Bojanczyk, K.G. Gebremedhin, C.N. Lee, P.E. Hillman)
- 52 095679 **Development of a Portable Metabolism Crate for Cattle**
Jeremiah D. Davis, Mississippi State Univ, Starkville, MS (J.D. Davis, T.B. Schmidt, S. Behrens, C.S. Ryals)
- 53 095930 **Application of a Surface Aeration System with Venturi Injectors to Reduce Odor Generation Potential: A Field-Scale Study**
Chunying Dong, Univ of Minnesota, Saint Paul, MN (C. Dong, J. Zhu, C.F. Miller)
- 54 096305 **Phosphorus Remediation of a Manured Cornfield by Alfalfa**
Roger A. Eigenberg, USDA ARS, Clay Center, NE (R.A. Eigenberg, B.L. Woodbury, R.B. Ferguson, J.A. Nienaber, M. Spiehs)
- 55 097297 **Reusing Recycled Supernate for Dilution to Enhance Chemical P Removal in Liquid Dairy Manure**
Jactone Arogo, Virginia Polytechnic Inst & State Univ, Blacksburg, VA (J. Arogo; J.DeBusk; K.F. Knowlton)
- 56 096882 **Effect of Different Biofertilizers Produced by the Anaerobic Digestion of Wastewater Cassava in Soil Chemical Characteristics**
Keles Regina Antony Inoue, Universidade Federal de Vicosa, Vicosa, MG Brazil (C.F. Souza, I.F.F.Tinoco, M.C.C. Guimaraes, I. Menegali, E.E.N. Alves)
- 57 096924 **Use of Steel Slag to Reduce Phosphorus Loading in Animal Waste Handling Systems**
Rhonda Miller, Utah State Univ, Logan, UT (B. Jensen; B. Munns; R. Miller, Ph.D.)
- 58 096465 **Forced Aeration Composting System for Swine Manure Treatment**
Xiuping Tao, Institute of Environment & Sustainable Development in Agriculture CAAS, Beijing, Beijing (Presenter: Hongmin Dong; X. Tao, H. Dong, A. Tanaka, B. Shang)
- 59 096743 **Effectiveness of Marsh-aerated Pond-Marsh Constructed Wetlands Treating Swine Wastewater**
Kyoung S. Ro, USDA ARS, Florence, SC (K.S. Ro, P.G. Hunt, M.H. Johnson, T.A. Matheny, and G.B. Reddy)
- 60 097456 **Studying Compaction Behavior of Fractionated Poultry Litter and Use of Pyrolysis Condensate as Binder During Pelletizing**
Kaushindra Singh, The University of Georgia, Athens, GA (K. Singh, L.M. Risse, K.C. Das, J. Worley, S. Thompson, S. Man)
- 61 097471 **Field Evaluation of Dried Distiller Grain Solids and Best Management Practices to Reduce Ammonia Emissions from A High-Rise Layer Barn**
Teng Teeh Lim, Purdue Univ, West Lafayette, IN (T.T. Lim, A.J. Heber, J.-Q. Ni, S.M. Hanni)
- 62 097482 **Nitrous Oxide Emissions from Riparian Buffers Contiguous to Livestock Waste Management Fields**
Patrick G. Hunt, USDA ARS, Florence, SC (Presenter Kyoung Ro; P. G. Hunt, K. S. Ro , T. F. Ducey, and R. R. Lowrance)
- 63 095561 **Modifying Animal Waste Management (AWM) System to Improve it Capabilities**
Harbans Lal, USDA NRCS, Portland, OR (C. Gross, J. Davis)
- 64 096310 **Nutrient Transport from Feedlot Surfaces as Affected by Unconsolidated Surface Material**
John E. Gilley, USDA ARS, Lincoln, NE (J.E. Gilley, E.D. Berry, R.A. Eigenberg, D.B. Marx, J.R. Vogel, B.L. Woodbury)
- 65 096228 **Poultry manure combustion with energy production: a profitable way to solve a problem**
Alessandro Chiumenti, Universita Di Udine, Udine, Italy (A. Chiumenti, R. Chiumenti, F. da Borso, R. Gava)
- 66 090022 **Concentrations and Size Distribution of Particulate Matter in Large Cattle Feedlot**
Li Guo, Kansas State Univ, Manhattan, KS (L. Guo, R.G. Maghirang, E.B. Razote, H.F. Bonofano, S.L. Trabue, L. McConnell, J.D. Harner, W. Hargrove)
- 67 090023 **The Effect of a Floating Cellular Plastic Cover for Slurry Storage on the Emission Prevention of Ammonia and Greenhouse Gases**
Maarit Hellstedt, MTT Agrifood Research Finland, Seinäjoki, Finland (M. Hellstedt, S. Ilkka)
- 68 090024 **TEOM PM(10) and PM(2.5) Concentrations at Beef Cattle Feedlots in Kansas**
Edna B. Razote, Kansas State Univ, Manhattan, KS (E.B. Razote, R.G. Maghirang, B.W. Auvermann, L. Guo, H.F. Bonifacio, J.P. Harner III, W.L. Hargrove, J.M. Sweeten)
- 69 090025 **Determination of Particle Size Distribution of Particulate Matter Emitted from a Layer Operation in Southeast U.S.**
Lingjuan Wang, North Carolina State Univ, Raleigh, NC (L. Wang, Z. Cao, D. Beasley, C. Parnell, Y. Zhang)

Tuesday, June 23 – 2:30PM-5:00PM

- 233 (FPE-2) **ADVANCES IN BIOCOMPOSITES AND BIOPRODUCTS** (FPE-701)
Moderator: Lope G. Tabil, Jr, Univ of Saskatchewan, Saskatoon, SK Canada
LOCATION: Nevada 8
PRESENTATION TITLE
Introduction
- 2:30PM PAPER # 095977 **Polyphenol-Nanocellulose Composites that Biomimic the Plant Cell Wall**
Ahmad IM Athamneh, Virginia Tech, Blacksburg, VA (Z. Li, J.R. Barone)
- 2:50PM 097056 **Thermal Analysis of Biofiber-Reinforced Polypropylene Composites**
Lope G. Tabil, Jr, Univ of Saskatchewan, Saskatoon, SK Canada (M. Soleimani, S. Panigrahi, L. Tabil, O. Baik, I. Oguocha)
- 3:05PM 095931 **Preparation and Characterization of Thermoplastic Composites Reinforced with Sunflower Hull**
Chad A. Ulven, North Dakota State Univ, Fargo, ND (M. Fuqua, S. Huo, C. Ulven)
- 3:20PM 097331 **Development of high performance biocomposite by using hybrid fibre (flax and glass)**
Satyanarayan Panigrahi, Univ of Saskatchewan, Saskatoon, SK Canada (S. Panigrahi, L.G. Tabil, N. Bawa, S. Panigrahi)
- 3:35PM 096694 **Effects of reinforcing glycerol-plasticized pea starch with polycaprolactone and flax fiber**
Olayide O. Fabunmi, Univ of Saskatchewan, Saskatoon, SK Canada (O. Fabunmi, L. Tabil, P. Chang, S. Panigrahi)
- 3:50PM Break
- 4:00PM 096721 **Biosynthesis and Analysis of Exoglucanase Cellulose Binding Domains (CBDs)**
Jing Guo, Pennsylvania State Univ, University Park, PA (J. Guo, M. Tien, J. Catchmark)
- 4:15PM 096327 **Influence of Plasticizers on Properties of Polymers made from Canola Protein Polyester Blends**
Scott W. Pryor, North Dakota State Univ, Fargo, ND (Presenter: Wajira Manamperi; W.A. Manamperi, J. Sehwat, M. Fuqua, C.A. Ulven, S.W. Pryor)
- 4:30PM 096665 **Pelleting Wheat-Based Distiller's Dried Grains with Solubles: Quality Characteristics**
Lope G. Tabil, Jr, Univ of Saskatchewan, Saskatoon, SK Canada (A. Opoku, L. Tabil and O. Fadeyi)
- 4:45PM 096321 **Permeability of Wood Pellets to Low Air Flows**
Fahimeh Yazdanpanah, UBC, Vancouver, BC Canada (F. Yazdanpanah, S. Sokhansanj, A. Lau, X. Bi, C.J. Lim, S. Melin)
- 5:00PM 097313 **Extraction and Characterization of Flaxseed Oil for Polymeric Application**
Anup Rana, Univ of Saskatchewan, Saskatoon, SK Canada (A. Rana, S. Panigrahi, L. Tabil)
- 5:15PM 090001 **Epoxy Resin from High-Oleic Oils Applied to Composites**
Judith D. Espinoza Perez, North Dakota State Univ, Fargo, ND (J.D. Espinoza Perez, D.P. Wiesenborn, D.M. Haagenson, R.L. Brudvik, C.A. Ulven)

Tuesday, June 23 – 2:30PM-5:00PM

- 234 (FPE-12) **FOOD SAFETY ENGINEERING** (FPE-703)
Moderator: Kathiravan Krishnamurthy, National Center for Food Safety and Technology, Summit Argo, IL
LOCATION: Nevada 11
PRESENTATION TITLE
Introduction
- 2:30PM PAPER # 097375 **Evaluation of Treatment Method using Anhydrous Ammonia for reducing Bacteria**
Kevin M. Keener, Purdue Univ, West Lafayette, IN (A. Saxena, J.L. Jensen, and K.M. Keener)
- 2:50PM 096722 **Validating a Salmonella Thermal Lethality Model that Accounts for Prior Sublethal Injury during Commercial Meat and Poultry Cooking Processes**
Bradley P. Marks, Michigan State Univ, East Lansing, MI (B.P. Marks, M.I. Tenorio-Bernal, T.J. Breslin, E.T. Ryser, A.M. Booren)
- 3:05PM 095973 **Decontamination of Chicken Frankfurters with Pulsed UV-Light**
Nene M. Keklik, Penn State Univ, University Park, PA (N.M. Keklik, A. Demirci, V.M. Puri)
- 3:20PM 095974 **Decontamination of Shell-Eggs with Pulsed UV-Light**
Nene M. Keklik, Penn State Univ, University Park, PA (N.M. Keklik, A. Demirci, P.H. Patterson, V.M. Puri)
- 3:35PM Break
- 3:45PM 097463 **Microbial Validation of Microwave pasteurization of eggs**
Satyanarayandev Raja Lakshmi Sivaramkrishnan, McGill Univ, Ste-Anne-de-Belleuve, QC Canada (S.R.S.Dev, V.Orsat, Y.Gariepy, G.S.V.Raghavan)
- 4:00PM 096047 **Infrared Heating for Improved Safety and Processing Efficiency of Dry-Roasted Almonds**
Jihong Yang, Univ of California, Davis, CA (J. Yang, Z. Pan, M. Brandt, T.H. McHugh, D. Olson, G. BINGO)
- 4:15PM 095954 **Identification of antifungal volatiles generated by Bacillus subtilis against Penicillium expansum**
Junling Shi, Northwest A&F University, Xi'an, Shaanxi (H. Sun)
- 4:30PM 097434 **Effect of Plant Surface Microstructure on Bacterial Attachment**
Bunpot Sirinutsomboon, Univ of California, Davis, CA (B. Sirinutsomboon, M.J. Delwiche, J.D. Barak)



Technical Sessions



ASABE 2009 ANNUAL INTERNATIONAL MEETING - RENO, NEVADA USA

Tuesday, June 23 – 2:30PM-5:00PM

235	(FPE-18)ANAEROBIC DIGESTION AND BIOGAS PRODUCTION, PROCESSING, AND UTILIZATION (FPE-707) Moderator: Ruihong Zhang, Univ of California Davis, Davis, CA LOCATION: Nevada 9
TIME	PAPER #
2:30PM	PRESENTATION TITLE
	Introduction
2:35PM	097423
	Biogas production during co-digestion of dairy manure and food waste mixtures Hee Kwon Ahn, USDA-ARS, Beltsville, MD (H.K. Ahn, M.C. Smith, J.W. White, S.L. Kondrad)
2:50PM	097052
	Precision Gas Flow Meter for Measuring Biogas Production in Laboratory Bioreactors Iain C. Clark, University of California-Davis, Davis, CA (I. Clark, R. Zhang, Z. Pan, B. Brown, J. Ambuel, M. Shafii)
3:05PM	095902
	Thermophilic Operation of the Induced Blanket Reactor Anaerobic Digester J Shaun Dustin, Utah State Univ, Logan, UT (J.S. Dustin, C.L. Hansen, S. Viamajalah)
3:20PM	096317
	Investigation of Anaerobic Digestion of Municipal Solid Wastes Conly L. Hansen, Utah State Univ, Logan, UT (C. Hansen, C. Hansen, R. Thompson, L. Buckle, G. Gitschel)
3:35PM	095773
	Implementation of a distributed standard anaerobic digester control system based on observations from real world failure analysis Greg M. Linder, Clarkson Univ, Potsdam, NY (G. Linder, S. Grimberg, E. Thacher, P. Pillay, S. Jones)
3:50PM	Break
4:00PM	096061
	Effect of food to microorganism ratio on biohydrogen production from food waste via anaerobic fermentation Jinming Pan, Univ of California Davis, Davis, CA (Y. Gu, G. Lv, L. Fu, R. Zhang, Y. Ying)
4:15PM	095765
	Anaerobic Digestion of Dairy Manure Supplemented with Duckweed Dawn M. Reinhold, Michigan State Univ, East Lansing, MI (P. Triscari, S. Henderson, D. Reinhold)
4:30PM	096422
	Experiences with Commercially Operating Large-Scale Anaerobic Co-digestion Systems Steven M. Zicari, Microgy, Davis, CA (S. Zicari)

Tuesday, June 23 – 2:30PM-5:00PM

236	(FPE-24B) CHALLENGES IN BIOMASS FEEDSTOCK LOGISTICS AND PROCESSING - PART 2 (FPE-709) Moderator(s): Kasiviswanathan Muthukumarappan, South Dakota State Univ, Brookings, SD Sushil Adhikari, Auburn Univ, Auburn University, AL LOCATION: Nevada 10
TIME	PAPER #
2:35PM	096658
	PRESENTATION TITLE
	A Tub-Grinding/Roll-Press Compaction System to Increase Biomass Bulk Density: Preliminary Study Nalladurai Kaliyan, Univ of Minnesota, St Paul, MN (N. Kaliyan, R.V. Morey, D.G. Tiffany)
2:50PM	096544
	Investigating Torrefaction Process Variables for Moisture Reduction and Densification of Biomass Feedstock Matthew J. Darr, Iowa State Univ, Ames, IA (Presenter: Dorde Medic; D. Medic, M.J. Darr, S.J. Birrell)
3:05PM	096672
	Characteristics and compositional variation in round and square sorghum bales under different storage conditions Amit Khanchi, Oklahoma State Univ, Stillwater, OK (A. Khanchi, C.L. Jones)
3:20PM	097196
	Key Exogenous Factors Governing Optimal Logistics Cost of Corn Stover for Ethanol Production Kyo Suh, Univ of Minnesota, St Paul, MN (K. Suh, R. Barker, S. Suh)
3:35PM	Break
3:45PM	097145
	Optimizing Irrigation Rates for an Experimental Energy Crop Rotation Daniel K. Mullenix, Auburn Univ, Auburn, AL (D.K. Mullenix, J.P. Fulton, M. Dougherty, E. Ceibert, O.O. Fasina, W.C. Zech, S. Adhikari)
4:00PM	090015
	Differential Composition of Energy Sorghum by Time and Location on Plant Brandon E. Hartley, Texas A&M Univ, Santa Fe, TX (B. Hartley, J.D. Gibson, R. Sui, J.A. Thomasson, S.W. Searcy)
4:15PM	095987
	Preprocessing Moist Lignocellulosic Biomass for Biorefinery Feedstocks Neal A. Yancey, Idaho National Laboratory, Idaho Falls, ID (N.A. Yancey, C.T. Wright, C.C. Conner, J.R. Hess)

Tuesday, June 23 – 2:30PM-5:00PM

237	(BE-9B) BIOSENSORS - PART 2 (BE-23) Moderator: Christian Y. Whysong, Virginia Tech, Broad Run, VA LOCATION: McKinley
TIME	PAPER#
2:35PM	090004
	PRESENTATION TITLE
	Intelligent Artificial Nose (IAN) for Classification of Salmonella Contaminated Meat Suranjan Panigrahi, North Dakota State Univ, Fargo, ND (S. Panigrahi, L. Khot, Y. Chang, J. Glower, J. Amamcharla, C. Logue, J. Sherwood)
2:50PM	095695
	Detection and Identification of Microorganisms in Mixed Cultures by Nanoparticle-Induced NanoSPR Enhanced FTIR Spectroscopy and Chemometrics Chenxu Yu, Iowa State Univ, Ames, IA (Q. Wang, N. Xiao, C. Yu)
3:05PM	096350
	Portable real-time biosensor for screening contaminated irrigation water on fresh produce Jeong Yeol Yoon, Univ of Arizona, Tucson, AZ (D.J. You, J.-Y. Yoon)

3:20PM	096345
	Optical detection of livestock and poultry viral pathogens in microfluidics Jeong Yeol Yoon, Univ of Arizona, Tucson, AZ (J.-Y. Yoon, B.C. Heinze, C.-H. Lee, J.-Y. Song, A. Najam)
3:45PM	095952
	Surface plasmon resonance (SPReta) detection of fungicide iprovalicarb residues Han Keun Cho, Chungbuk National Univ, Cheongju, South Korea (H.K. Cho, W.H. Kim, K.S. Kyung)
4:00PM	097412
	Development of Isothermal DNA Replication Mechanisms to Discriminate Ralstonia solanacearum isolates at the Subspecies Level Ryo Kubota, Univ of Hawaii, Honolulu, HI (R. Kubota, A. Miyamoto, N. Kawabata, A. Alvarez, D.M. Jenkins)
4:15PM	096701
	Biosensor for Huanglongbing Detection in Orange Leaves Juan M. Cevallos, Univ of Florida, Lake Alfred, FL (J.M. Cevallos-Cevallos, J.I. Reyes-De-Corcuera)
4:30PM	096532
	Flow injection immunosensing of Triazophos with a quartz crystal microbalance Junran Huang, Zhejiang University, HangZhou, ZheJiang China (J. Huang, J. Wang, Z. Ye, Y. Ying, Y. Li)

Tuesday, June 23 – 2:30PM-5:00PM

238	(BE-12A) CHALLENGES IN LIGNOCELLULOSIC CONVERSION - PART 1 (BE-28) Moderator: Mark R. Wilkins, Oklahoma State Univ, Stillwater, OK LOCATION: Cascade 1&2
TIME	PAPER #
2:30PM	PRESENTATION TITLE
	Introduction
2:35PM	097326
	Review of lignocellulosic biomass pretreatment technologies for bioconversion and biofuel production Joshua L. Rapport, Univ of California, Davis, CA (J.L. Rapport, R. Zhang)
2:50PM	097197
	A new biochemical platform for fuels and chemicals production Zhiqiang Fan, Univ of California, Davis, CA (Weihsia Wu, Xiaochao Xiong, Ruitu Zhang, Takao Kasuga)
3:05PM	096661
	Rational thermostabilization of Cellulase C from Clostridium thermocellum Somayesadat Badieyan, Virginia Tech, Blacksburg, VA (Somayesadat Badieyan, David Bevan, Mike Zhang)
3:20PM	096333
	Preparation and Characterization of Recycled Cellulase Immobilized on Super Paramagnetic Iron Oxide Nano-Particles (SPION) Jason M. Jordan, Louisiana State Univ, Vidalia, LA (Jason Jordan, Chandra Theegala)
3:35PM	096269
	Effect of harvest date on switchgrass quality for ethanol production Michael E. Matousek, Oklahoma State Univ, Hennessey, OK (M. Matousek, M. Wilkins, N. Dunford, Y. Wu)
3:50PM	Break
4:00PM	096007
	Process Simulation of Dilute Acid Pretreatment of Coastal Bermudagrass for Bioethanol Production Arthur P. Redding, North Carolina State Univ, Raleigh, NC (A.P. Redding, D.R. Keshwani, J.J. Cheng)
4:15PM	096677
	Optimization of biomass and high shear bioreactor parameters for enzymatic hydrolysis using response surface methodology Karunanithy Chinnadurai, South Dakota State Univ, Brookings, SD (C. Karunanithy, K. Muthukumarappan)
4:30PM	095622
	Kinetic Modeling for Enzymatic Hydrolysis of Pretreated Creeping Wild Ryegrass Yi Zheng, Univ of California, Davis, CA (Yi Zheng, Z. Pan, R. Zhang, B.M. Jenkins)
4:45PM	097034
	Kinetics of Acid-Catalyzed Hemicellulose Hydrolysis Lope G. Tabil, Jr, Univ of Saskatchewan, Saskatoon, SK Canada (M. Soleimani, L. Tabil, S. Panigrahi, B. Crerar)

Tuesday, June 23 – 2:30PM-5:00PM

239	(BE-6/7/8) RIPARIAN CORRIDORS, NUTRIENT CYCLING, AND WETLAND ENGINEERING (BE-22, SW-21, SW-224) Moderator(s): Francois Birgard, North Carolina State Univ, Raleigh, NC Anand D. Jayakaran, Clemson University, Georgetown, SC LOCATION: Sierra 1
TIME	PAPER #
2:30PM	PRESENTATION TITLE
	Introduction
2:35PM	095855
	Georeferenced Surface and Bathymetric Riverine Habitat Mapping James B. McConkey, Univ of Tennessee, Knoxville, TN (B. McConkey, P. Ayers, S. Bakaletz, E. Robisch)
2:50PM	097060
	Developing Inventory of Riparian Buffer Cover in L'Angeuille River Watershed using Geospatial Technologies Dharmendra Saraswat, University of Arkansas, Little Rock, AR (D. Saraswat., N. Pai)
3:05PM	095723
	The Restoration of Fluvial Systems - The Need for an Integrated Approach to Streams, Floodplains, and Wetlands Richard A. Weber, USDA NRCS, Crowley, TX (R. Weber, J. Frupp)
3:20PM	097147
	Assessing Temporal Landcover Change (1975-2000) in Headwater Riparian Zones Ik-Jae Kim, PhD, Korea Environment Institute (KEI), Seoul, South Korea (I.H. Song, M.S. Byeon, J.K. Lee)
3:35PM	097154
	Comparison of Headwater Stream Health and Landcover Change in Han River, Korea Ik-Jae Kim, PhD, Korea Environment Institute (KEI), Seoul, South Korea (D.H. Han, I.H. Song)
3:50PM	Break
4:00PM	097433
	Nutrient Interactions at the Sediment-Water Interface of Tile-Fed Drainage Ditches Laurent M. Ahiablame, Purdue Univ, West Lafayette, IN (L. Ahiablame)



Technical Sessions



ASABE 2009 ANNUAL INTERNATIONAL MEETING - RENO, NEVADA USA

- 4:15PM 096523 **Measuring Nutrient Retention in Streams: Scale Matters**
Francois Birgand, North Carolina State Univ, Raleigh, NC (G.M. Chescheir)
- 4:30PM 096626 **Nitrogen Retention and Release in Laboratory Mesocosms**
Francois Birgand, North Carolina State Univ, Raleigh, NC (G.M. Chescheir)
- 4:45PM 096324 **A Water Quality and Morphological Analysis of a Restored Tidal Marsh and Stream System in Coastal North Carolina**
William E. Corbin, North Carolina State Univ, Raleigh, NC (W.Evan Corbin, M.R. Burchell II, G.D. Jennings, S.W. Broome, W.W. Kirby-Smith, K.L. Bass)
- 5:00PM 097051 **Facilitated iron-reduction as a means of rejuvenating the phosphorous removal performance of constructed wetlands**
Shawn E. Rosenquist, Virginia Tech, Christiansburg, VA (S.T. Sell, C. Levy, S.E. Rosenquist, D.H. Vaughan, W.C. Hession)

Tuesday, June 23 – 2:30PM-5:00PM

241 (INTL-2B) ENGINEERING TECHNOLOGIES FOR THE DEVELOPING COUNTRIES - PART 2 (International)

Moderator: Israel Sunday Dunmade, Mount Royal College, Calgary, Calgary, AB Canada
LOCATION: Whitney

- | TIME | PAPER # | PRESENTATION TITLE |
|--------|---------|---|
| 2:30PM | | Introduction |
| 2:35PM | 096623 | Local Manufacturers in the Nigerian Agro-Allied Machinery Fabrication Industry and their Attendant Problems
Mobolaji O. Omobowale, Ibadan, Oyo State, Nigeria (Omobowale M.O.) |
| 2:50PM | 097030 | Moringa Leaf Processing
Allison K. Jonjak, Univ of Minnesota, Hayward, WI (Allison Jonjak) |
| 3:05PM | 097392 | Milk Yield, Milking Time and Milk Flow Rate of West African Dwarf, Yankasa and Crossbred Ewes in Relation to Milking Machine
Babatunde Adewale Adewumi, Federal University of Technology, Akure, Nigeria (O.O. Adewumi, O.B. Oke, B.A. Adewumi) |
| 3:20PM | 097219 | Evaluation of physical and functional properties of rye-mushroom powder blend and its extrudates
Bhabani Sankar Panigrahy, University of Regina, Regina, SK Canada (Bhabani Sankar Panigrahy, Shinoj Subramannian, Satyanarayan Panigrahi) |
| 3:35PM | | Break |
| 3:45PM | 096657 | Effects of Moisture Content on Some Frictional and Aerodynamic Properties of Okra (Abelmoschus Esculentus (L) Moench) Varieties
Emmanuel Atooj Avaj, Univ of Ibadan, Ibadan, Nigeria (A.O. Adejumo, E.A. Ajav, J.C. Igbeka) |
| 4:00PM | 097322 | Performance studies of oil seed flax fibre reinforced recycled thermoplastics
Satyanarayan Panigrahi, Univ of Saskatchewan, Saskatoon, SK Canada (S. Panigrahi, K. Barghout, V. Shunmugavel, L. Tabil) |
| 4:15PM | 090016 | Storage Stability of Smoked Fish as Influenced by Fat Content and Equilibrium Moisture Content
J.A.V. Famurewa, Federal Univ of Technology, Akure, Nigeria (Presenter: Israel Dunmade; J.A.V. Famurewa, B.A. Adewumi, I. Dunmade) |
| 4:30PM | 095947 | A Study on the Waste Management in the Alberta's Agricultural and Agri-processing Industry
Israel Sunday Dunmade, Mount Royal College, Calgary, Calgary, AB Canada (I. Dunmade) |

Tuesday, June 23 – 2:30PM-5:00PM

242 (PM-20) SPECIALTY CROPS PRODUCTION ENGINEERING (PM-48)

Moderator: Reza Ehsani, Univ of Florida, Lake Alfred, FL
LOCATION: Carson 3

- | TIME | PAPER # | PRESENTATION TITLE |
|--------|---------|--|
| 2:30PM | | Introduction |
| 2:35PM | 095518 | Green Chile Harvester Field Trials
Paul A. Funk, USDA ARS, Mesilla Park, NM (P.A. Funk, S. Walker) |
| 2:50PM | 090032 | A Study on Mechanical Harvesting of Jatropha for Biodiesel Production
Uriel A. Rosa, Univ of California Davis, Davis, CA (U.A. Rosa) |
| 3:05PM | 095710 | Engineering a Machine to Remove Stems from Chile Peppers-A Critical Need for the New Mexico Chile Industry
Ryan Herbon, New Mexico State University, M-TEC Dept, Las Cruces, NM (R. Herbon, A. Hyde, D. Cillessen, E. Gamillo) |
| 3:20PM | 090033 | Detection of HLB-Infected Citrus Trees Using VIS-NIR Spectroscopy and Mathematical Methods
Davood Karimi, Univ of Manitoba, Winnipeg, MB Canada (D. Karimi, R. Ehsani) |
| 3:35PM | 096408 | Development of an RTK GPS plant mapping system for transplanted vegetable crops
Hao Sun, Univ of Kansas, Lawrence, KS (Presenter: M. Perez Ruiz; H. Sun, D.C. Slaughter, S.K. Upadhyaya, M. Pérez Ruiz, R. Smith) |
| 3:50PM | | Break |
| 4:00PM | 090034 | Quantification of Total Soluble Solids Contents and Titratable Acidity to Assess Citrus Maturity Using a Mid-IR Spectrometer and a Vis-NIR Spectroradiometer
Rashidah Ruslan, Univ of Florida, Winter Haven, FL (R. Ruslan, R. Ehsani) |
| 4:15PM | 096312 | Citrus Tree Canopy Density Measurement using an Electromagnetic Induction Technique
Ganesh C. Bora, North Dakota State University, Fargo, ND (G.C. Bora, R.a Ehsani) |
| 4:30PM | 096332 | Turbulent Gas-Particle Flow Modeling for the Mitigation of Dust Emission from Nut Harvesters |

- 4:45PM 090035 **Extracting Performance Parameters of a Citrus Mechanical Harvesting Machine from Yield Data**
Ramin Shamshiri, Univ of Florida, Gainesville, FL (R. Shamshiri, R. Ehsani, D. Karimi)

Tuesday, June 23 – 9:30PM-12:00PM

243 NEW PRODUCTS - Invited Speakers

Moderator: Candice L. Johnson, John Deere Intelligent Vehicle Systems, Ankeny, IA
LOCATION: Cascade 1&2

Each year the AE50 recognition awards honor companies offering the best engineered products for agricultural, food, biological and related systems. These companies continue to push the envelope of new equipment design through innovation. The AE50 products featured in this session were new to the marketplace in 2008, and all have the potential for a broad impact in their area or industry. This is an excellent opportunity to learn of new features incorporated into these products and share a portion of their journey to the marketplace. The session is open to everyone and will feature presentations on a sampling of those products receiving 2009 AE50 Awards.