



TECHNICAL SESSIONS

POWER & MACHINERY

Monday, July 10 - 9:30AM-12:00PM

100-PM-2B QUANTITATIVE METHODS IN PESTICIDE APPLICATION

(Sponsored by PM-23/6)

Moderator: Harold W. Thistle, USDAFS, Morgantown, WV

Location: A103

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	061001	Development and Validation of a New Deflectory System to Improve Pesticide Application in New York and Pennsylvania Grape Production Areas , Andrew John Landers, Cornell Univ, Geneva, NY(A. Landers; E. Gil)
9:45AM	061002	Real-time Monitoring of Atomization from Spray Nozzles Using Vibration: Theoretical Basis and Experimental Investigation , Ken Giles, Univ of California Davis, Davis, CA(D.K. Giles)
9:55AM	061003	Reducing the Pesticide Burden on UK Crops Through the Use of Targeted Delivery Systems , David L. Valcore, Dow Agroscience, Indianapolis, IN (I. Baxter, C. Longhurst, J. Clayton, G. Matthews)
10:05AM	061014	Modeling of Biomass Wet Storage System , Sudhagar Mani, Univ of British Columbia, Vancouver, BC Canada (S. Mani, S. Sokhansanj, X. Bi)
10:25AM	061005	Development of a Process-Oriented Model of Bacillus thuringiensis Efficacy Against the Gypsy moth, Lymantria dispar , Kees van Frankenhuyzen, Canadian Forest Service Great Lakes Forestry Centre, Sault Ste. Marie, Canada – Presenter: Jacque Regniere (K. van Frankenhuyzen; J. Regniere)
10:05AM		Break
10:15AM	061004	Effect of Nozzle Type on Glyphosate Efficacy and Spray Particle Drift , Erdal Ozkan, Ohio State Univ, Columbus, OH (E.Ozkan; J.Stachler; M.Loux; S.Ruhl)
10:35AM	061006	Determination of Dry Material Physical Characteristics for Use in Dispersion Modeling , Milton E. Teske, Continuum Dynamics Inc, Ewing, NJ (M. Teske; H. Thistle; A. Onken)
10:45AM		Break
10:55AM	061007	Spraytran: A GIS-Based Atmospheric Spray Droplet Dispersion Modeling System , Sandy L. Bird, Environmental Protection Agency, Athens, GA(S.L. Bird; H. Thistle; K.J. Allwine; F.C. Ruts; J. Droppo)
11:05AM	061008	Quantifying the Amount of Aerial Spray in the Air Over Time for Vector Control Operations , April L. Hiscox, Univ of Connecticut, Manchester, CT(A. Hiscox; D. Miller)
11:15AM	061009	Allowable Separation Distances for Wind Predictions , David B. Smith, Mississippi State Univ, Mississippi State, MS (D.B. Smith; N. Lopez)
11:25AM	061010	Development of a Test Plan to Verify Pesticide Drift Reduction Technology Performance , Andrew J. Hewitt, Univ of Queensland, Gatton, QLD Australia – Presenter Normal Birchfield (A. Hewitt; M. Kosusko; N. Birchfield)
11:35AM		Break

July 10 – 9:30AM-12:00PM

101-PM-6 BIOMASS HARVEST, STORAGE, AND PROCESSING CONSIDERATIONS FOR FEEDSTOCK OR FEED

(Sponsored by PM-23/7/2)

Moderator: Maynard M. Herron, AGCO Corp, Hesston, KS

Location: A107

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	061012	Drying, Harvesting and Storage Characteristics of Perennial Grasses as Biomass Feedstocks , Kevin J. Shinnars, Univ of Wisconsin, Madison, WI (K.J. Shinnars, G.C. Boettcher, P.J. Weimer, M. Cassler)
9:50AM	061013	Effect of Inoculants on the Ensiling of Corn Stover , Richard E. Muck, USDAARS, Madison, WI (R.E. Muck, K.J. Shinnars)
10:20AM	061015	Single-Pass, Split-Stream Harvest of Corn Grain and Stover: Characteristic Performance of Three Harvester Configurations , Kevin J. Shinnars, Univ of Wisconsin, Madison, WI (K.J. Shinnars, G.C. Boettcher, J.T. Munk, M.F. Digman, R. E. Muck)
10:35AM		Break
10:45AM	061016	Development of a Cutter-Shredder-Balerto Harvest Long-Stem Willow , Philippe Savoie, Agriculture & Agri-Food Canada, Ste Foy, QC Canada (P. Savoie, L. D'Amours, F. Lavoie, G. Lechasseur, H. Joannis)
11:00AM	061017	Using Agricultural Feed Stocks in the Production of Syngas in a Downdraft Gasifier , James R. Wooten, Mississippi State Univ, Mississippi State, MS (J. Wooten, E. Columbus, W. Batchelor, L. Wie, M. Bricka)
11:15AM	061018	Agro-Eco-Industrial Park Development for Liuminying Village of China: Focus on the Integrated Renewable Energy System , Liping Duan, Cornell Univ, Ithaca, NY(L. Duan, N.R. Scott)
11:30AM	061019	Simulation and Image Analysis of Basecutter Operation in Sugarcane Harvesting , Yinggang Ou, South China Agricultural Univ, Guangzhou, Peoples Republic of China (Q. Liu, Y. Ou, S. Qing, D. Yang)

Monday, July 10 – 9:30AM-12:00PM

102-PM-7B ADVANCES IN COTTON ENGINEERING - GINNING

(Sponsored by PM-23/7/3)

Moderator: Derek P. Whitlock, SWCotton Ginning Res Lab USDAARS, Mesilla Park, NM

Location: A104

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	061020	Systems Engineering of Seed Cotton Handling and Ginning in Texas , Calvin B. Parnell, Texas A&M Univ, College Station, TX (C.B. Parnell, Jr., S. L. Simpson, J.D. Wanjura, B.W. Shaw, S.C. Capareda)

9:50AM	061021	Developments, Improvements, and Test Results for the Powered Roll Gin Stand , Greg A. Holt, USDAARS, Lubbock, TX (G.A. Holt)
10:05AM	061022	Lint Cleaning Improvement through First Principles , J. Alex Thomasson, Texas A&M Univ, College Station, TX (J.A. Thomasson, R. Sui)
10:20AM	061023	Development of an Electronic Hopper Weight Scale , Sanh Le, USDAARS, Mesilla Park, NM (S. Le)
10:35AM	061024	Long-term Storage Effects on Fiber Quality of Polyethylene Film Wrapped Cotton Bales , S. E. Hughs, USDAARS, Las Cruces, NM
10:50AM		Break
11:00AM	061025	Changes in Seed Coat Fragments During Cotton Ginning , James C. Boykin, USDA ARS, Stoneville, MS (J.C. Boykin)
11:15AM	061026	Using a Shear Test to Evaluate Cottonseed Strength , Carlos B. Armijo, USDAARS, Mesilla Park, NM (C.B. Armijo, D.C. Jones, E.M. Barnes, R. Percy, R.G. Cantrell)
11:30AM	061027	Upland Gin Season Sampling , Derek P. Whitlock, SWCotton Ginning Res Lab USDA ARS, Mesilla Park, NM (D.P. Whitlock, M.D. Buser, C.B. Armijo, G.A. Holt, T.D. Valco, D.S. Findley, E.M. Barnes, M.D. Watson)
11:45AM	061028	How Particulate Matter Sampling at a Cotton Gin Can Be Impacted by Stack Sampling Errors , Michael D. Buser, USDAARS Cotton Harvesting & Ginning Res U, Lubbock, TX (M.D. Buser)

Monday, July 10 – 9:30AM-12:00PM

103-PM-10 CONSERVATION TILLAGE AND EROSION CONTROL SYSTEMS (Sponsored by PM-42, SW-225)

Moderator: Randall C. Reeder, Ohio State Univ, Columbus, OH

Location: A108

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	061029	Effect of Conservation Tillage and Erosion on Soil Organic Carbon , Donald C. Reicosky, USDAARS, Morris, MN
9:50AM	061030	Strip Tillage on Sprinkler Irrigated Sugar Beets , Robert G. Evans, USDAARS, Sidney, MT
10:00AM	061031	Stabilizing Nutrient-Rich Farm Land with Manure Slurry-Enriched Seeding of Cover Crops in Diverse Cropping Systems , Timothy M. Harrigan, Michigan State Univ, East Lansing, MI
10:10AM	061032	Development of an Alternative, Reaper/Flail Based Harvesting System for No-Till Farming , Mark C. Siemens, USDAARS, Pendleton, OR
10:20AM	061033	Soil Quality and Conservation Tillage in the Palouse Region , Ann C. Kennedy, USDA ARS, Pullman, WA
10:35AM	061034	Innovative No-Till Farming for 30 yrs in the Palouse Region , John Aeschliman, Colfax, WA
10:50AM		Break
11:00AM	061035	Soil Management Practices to Reduce Erosion in the Midwest , Randall C. Reeder, Ohio State Univ, Columbus, OH
11:10AM	061036	When No-Till is not Enough: The Role of Vegetative Buffer Strips , Theo A. Dillaha, Virginia Tech, Blacksburg, VA
11:25AM	061037	Impact of Rolling/Crimping Direction of Cover Crop and Different Row-Cleaners on Cotton Emergence and Yield in No-Till Conservation System , Ted S. Kornecki, USDA ARS, Auburn, AL
11:35AM	061038	Effects of Conservation Systems on Soil Moisture and Productivity in Cotton , Jason K. Ward, USDAARS, Auburn, AL
11:45AM	061039	Using Non-inversion Tillage and Cover Crops to Increase Use of Conservation Agriculture in the South , Randy L. Raper, USDAARS, Auburn, AL
12:00AM	061040	The Conservation Security Program: Enhancing the Environment , Philip R. McLoud, USDANRCS, Greensboro, NC
12:15PM		Discussion & Adjourn

Monday, July 10 – 9:30AM-5:00PM

104-PM-25 PERFORMANCE AND ACCURACY OF GPS-BASED SYSTEMS (Sponsored by PM-54, PM-58)

Moderator: Matthew K. Rice, Univ of Tennessee, Unicoi, TN

Location: A105

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	061041	Evaluating the Dynamic Accuracy of GPS Receivers in Groves , Reza Ehsani, Univ of Florida, Lake Alfred, FL (R. Ehsani, M. Salyani)
9:50AM	061042	Evaluation of GPS-Based Auto-Guidance Systems Over Varying Time Periods , Tyrel L. Harbuck, Auburn University, Auburn University, AL (T.L. Harbuck, J.P. Fulton, T.P. McDonald, C.J. Brodbeck)
10:05AM	061043	Performance and Accuracy Comparisons of GPS and Total Station in Land Surveying , Unal Kizil, North Dakota State Univ, Dickinson, ND (U. Kizil)
10:20AM		Break
10:30AM	061044	Using GPS to Evaluate Vehicle Platoon Movement During Military Maneuvers , Matthew K. Rice, Univ of Tennessee, Unicoi, TN (A. B. Anderson, P. D. Ayers, M. K. Rice, C. Wu)
10:45AM	061045	Evaluating the Effect of Terrain on Field Area Measurements , Benjamin K. Koostira, Univ of Kentucky, Lexington, KY (B.K. Koostira, T.S. Stombaugh, T.G. Mueller, S.A. Shearer)
11:00AM	061046	Performance of a Decimeter Accuracy GPS Receiver for the Development of Topographic Maps , Kent Shannon, University of Missouri, Columbia, MO (D.K. Shannon, C.E. Ellis, G.D. Hoette)

All poster sessions will be held in Exhibit Hall A.

SOIL AND WATER

Monday, July 10 – 9:30AM-12:00PM

105 HYDROLOGY AND WATER QUALITY (POSTER) (Sponsored by SW)

Moderator: Indrajeet Chaubey, Univ of Arkansas, Fayetteville, AR

Location: Exhibit Hall A

POSTER # PAPER # PRESENTATION TITLE

- 1 062001 **A Continuous Rain-Garden Water Balance Model**, Brian D. Ashman, Univ of Minnesota, Saint Paul, MN (B. Ashman, B. Wilson)
- 2 062002 **Analysis Of Watershed Physical And Hydrological Effects On Baseflow Separation**, Pouyan Nejadhashemi, Univ of Maryland, Hyattsville, MD (Amir P. Nejadhashemi, Adel Shirmohammadi, Hubert J. Montas, Joseph M. Sheridan, David D. Bosch)
- 3 062003 **Annagaps Snowpack, Snowmelt, And Freeze/Thaw Modeling**, Daniel S. Moore, NRCS Water Quality & Quantity Team, WNTSC, Portland, OR (D.S. Moore; R.L. Bingner, F.D. Theurer)
- 4 062004 **Assimilation Of Agrichemicals And Sediments In Runoff Within Ditches And Constructed Wetlands**, Robert F. Cullum, USDAARS, Oxford, MS (M.T. Moore, S.S. Knight)
- 5 062005 **Development Of A Gis Decision Support System For Planned Expansion Of Animal Enterprises**, Benjamin K. Koostra, Univ of Kentucky, Lexington, KY (S.F. Higgins, B.K. Koostra, S.A. Shearer)
- 6 062006 **Distribution Of Event Mean Concentration (Emc) Of Nitrogen And Phosphorus From A Combined Dairy And Crop Farming Watershed**, Kwang S. Yoon, Chonnam National Univ, Kwangju, South Korea (K.S. Yoon, A. Shirmohammadi, H. Montas)
- 7 062007 **Effects Of Soil Organic Amendment On Water And Nutrient Movement In A Sandy Soil**, Chambal Pandey, Univ of Florida, Immokalee, FL (C. Pandey, S. Shukla)
- 8 062008 **Effects Of Water And Nutrient Strategies On Water Quality And Crop Yield**, Gregory S. Hendricks, Florida A&M Univ, Gainesville, FL (Gr. Hendricks, S. Shukla, K. Cushman, T.s Obreza)
- 9 062009 **Effects Of Water Retention In Agricultural Canals On Phosphorus Flux In The Lake Okeechobee Basin**, Sanjay Shukla, Univ of Florida, Immokalee, FL (S. Shukla, S.D. Collins, K. L. Campbell)
- 10 062010 **Evaluating Phosphorus Load Reductions Of Agricultural Water Management Practices Using Watershed Assessment Model**, Joyce J. Zhang, South Florida Water Manag. District, West Palm Beach, FL (J. Zhang, J.G. Hiscock, A.B. Bottcher, B. Jacobson, P.J. Bohlen)
- 11 062011 **Evaluation Of The Shaw Model For Within-Canopy Energy And Water Exchange**, Gerald N. Flerchinger, USDAARS, Boise, ID (G.N. Flerchinger)
- 12 062012 **Design And Testing Of Inexpensive Water Capture Devices For Water Quality Assessment**, Steven G. Hall, P.E., Louisiana State Univ, Baton Rouge, LA (S. Hall, J. Deras)
- 14 062016 **Modeling Channel Erosion At The Watershed Scale: A Comparison Of Gwlf, Swat, And Concepts**, Nathan A. Staley, Virginia Tech, Blacksburg, VA (N.A. Staley, T. Wynn, B. Benham)
- 15 062017 **Modeling Evapotranspiration In A Sub-Tropical Climate**, Mohammad R. Savabi, USDAARS, Miami, FL (M.R. Savabi, T.A. Cochrane, E. German, C. Ikiz, N. Cockshutt)
- 16 062018 **Nitrate Loading To Tile Drains And Corn Yield Under Different Conditions Predicted By Rzwqm**, Robert W. Malone, USDAARS, Ames, IA (R. Malone, L. Ma, P. Heilman, R. Kanwar, L. Ahuja, J. Hatfield)
- 18 062020 **Sediment And Nutrient Transport Through A Restored Agricultural Stream**, Justin T. Spangler, North Carolina State Univ, Raleigh, NC (J. Spangler, G. Jennings, D. Osmond, G. Grabow, D. Clinton)
- 19 062021 **Short- And Long- Wave Radiation Environment Of Irrigation Reservoir Surrounded By Mountains**, Tomakazu Haraguchi, Institute of Tropical Agriculture Kyushu Univ, Fukuoka, Japan (O. Kato)
- 20 062022 **Simulating Effect Of N Application On Tile Flow And Crop Yield Using Rzwqm For Southern Ontario Conditions**, Syed I. Ahmed, Iowa State Univ, Ames, IA (I. Ahmed, R. Rudra, K. Mckague, B. Gharabaghi)
- 21 062023 **Spatial And Temporal Variation Of Ground Water Quality In Sand Dune Area Of Aomori Prefecture In Japan**, Bijon K. Mitra, Iwate University, Aomori, Japan (B.K. Mitra, C. Sasaki)
- 22 062024 **The Research On Development Of The Estimation Model For No₃-N Concentration Of Groundwater In Miyako Island**, Tomohisa Shinkawa, Graduate School of Agriculture University of the Ryukyus, Nishihara-tyou, Okinawa, Japan (T. Shinkawa, K. Sakai, A. Yoshinaga)
- 23 062025 **Water Quality Impacts Of Reservoirs - Phase I Data Acquisition And Analysis**, Yanling Zhao, South Florida Water Mgmt Dist, West Palm Beach, FL (Y. Zhao)
- 24 062026 **CANCELLED**
- 25 062027 **Field Characterization Of Soil Parameters Using The Pedostructure Concept In Indiana**, Mohammed A. Salamat, Purdue Univ, West Lafayette, IN (M.A. Salamat, R.H. Mohtar, E. Braudeau)
- 26 062028 **The Path Analysis Between Electrical Conductivity Of 1:5 Soil Water Extract And Chemical Characteristics Of Soil Salinity**, Shumei Ren, China Agricultural Univ, Beijing, China (S. Ren, L. Yang, P. Yang)
- 27 062029 **Reduced Tillage Fallow Versus Chemical Fallow For Seed-Zone Water Storage In The Dryland Inland Pacific Northwest**, Prabhakar Singh, Washington State Univ, Pullman, WA (P. Singh, J.Q. Wu, W.F. Schillinger, D.R. Huggins, M. Flury)
- 28 062030 **Effect Of Cycle Time Of The Percentage Timer On Center-Pivot's Water Distribution Uniformity**, Haijun Yan, China Agricultural University, Beijing, China (H. Yan)
- 29 062031 **Rainfall Analyses For Irrigation Management In Ibadan Southwestern Nigeria**, Lola M. Akinyemi, Covenant University, Ota, Ogun, Nigeria (J.O. Akinyemi, M.L. Akinyemi)
- 30 062032 **Quality Of Different Sources Of Irrigation Water In Some Parts Of Ogun State, Nigeria**, Jacob O. Akinyemi, Ogun State Univ, Ibadan, Nigeria (J.O. Akinyemi and S.O. Souley)
- 31 062033 **Effects Of Climate Change On Nonpoint Source Pollution From Rural Watersheds In South Korea (Using The Gwlf Model)**, Sye W. Hwang, Seoul National University, Seoul, South Korea
- 32 062034 **Dynamics Of Pesticides At Watershed Scale: A Geo-Referenced Multimedia Modeling Approach**, Yuzhou Luo, Univ of Connecticut, Storrs Mansfield, CT (Y. Luo, X. Yang)
- 33 062035 **Combined Effect Of Leaching Fraction And Salinity On Barley Growth And Salt Distribution**, Ahmed S. Al-Busaidi, Tottori University, Tottori, Japan (A. Al-Busaidi, T. Yamamoto)
- 34 062036 **Diagnosis Of Water Quality For Animal Consumption From The Microwatershed Of The Angicos River, Paraíba, Brazil**, Carlos Alberto Vieira de Azevedo, Universidade Federal de Campina Grande, Campina Grande, Paraíba Brazil (F. Magnólia de Oliveira, C.A. Vieira de Azevedo, B.S. Ovruski de Ceballos, S.A. Rached Farias, A. Kalyana de Oliveira, J. Dantas Neto)
- 35 062057 **Watershed Modeling For Solid Contaminant Transport, Transformation And Fate**, Zhonglong Zhang, Environmental Laboratory, Clinton, MS (Z. Zhang, B. Johnson)
- 36 062038 **Understanding And Explaining The Relationships Between Dissolved Oxygen, Water Quality, And Natural Stream Ecosystems In The Coastal Plain Of Georgia**, George Vellidis, University of Georgia, Tifton, GA (G. Vellidis, R. Lowrance, S. Crow, G. Hawkins)
- 37 062039 **Modeling Best Management Practices In Watersheds: The Effect Of Grassed Waterways And Filter Strips On Runoff And Sediments Yields**, Taesoo Lee, Univ of NY at Buffalo, Buffalo, NY (T. Lee, C.S. Renschler)
- 38 062040 **Modeling A Watershed Basin Using The Regularized Tension Spline Software**, Hugo O. Carvallo, Federal University of Campina Grande, Paraíba, Brazil (E.P.F. Leite, H.O. Carvallo, A.R.S. Andrade, C.A.V. Azevedo)
- 39 062041 **Silver Disinfection Studies Of Pseudomonas Aeruginosa For Water Distribution Systems**, Nadia Silvestry Rodriguez, Univ of Arizona, Tucson, AZ (N. Silvestry-Rodriguez, C. P. Gerba, D. R. Uhlmann, D.C. Slack)
- 40 062042 **Experimental Studies On The Effects Of Reclaimed Water Irrigation On Soil Physicochemical Properties**, Peiling Yang, China Agricultural University Faculty of Hydraulic and Civil Engineering, New York, NY (P. Yang, L. Yang, S. Ren, C. Wang)
- 41 062043 **Validation Of Apex For Nine Forested Watersheds In East Texas**, Xiu Ying Wang, Blackland Research and Extension Center, Temple, TX (X. Wang, A. Saleh, M.W. Mcbroom, J.R. Williams)
- 42 062044 **Modeling Alternative Agricultural Management Practices For An Agricultural Watershed In South-Central Minnesota**, Prasanna H. Gowda, USDAARS, Bushland, TX (P. H. Gowda, D.J. Mulla)
- 43 062045 **Development Of Infiltration and Redistribution Module for Modeling of Long-Term Simulations**, Leslie C. Gowdishi, Univ of Florida, Bonita Springs, FL - Presenter: Rafael Munoz-Carpena (L.C. Gowdishi, R. Muñoz-Carpena)
- 44 062046 **Efficiently Predicting Erosion Hotspots Using Gis And Field Assessment For A Large Watershed**, Ipek Celen, The University of Tennessee, Knoxville, TN (S.R. Bevington, R. Butalia)
- 45 062047 **A Simple Method For Estimating Soluble Phosphorus In Surface Runoff In The Laboratory**, Jian Zhou, Univ of Florida, Immokalee, FL (J. Zhou, J.L. Baker, S. Shukla)
- 46 062048 **Determination Of Watershed Sediment Sources Using Usda Watershed And Channel Models**, Yongping Yuan, USDAARS, Oxford, MS (R. Bingner, E. Langendoen, R. Wells, A. Simon)
- 47 062049 **Close-Range, Oblique Photogrammetry For Mapping Plot Topography**, Conrad D. Heatwole, Virginia Tech, Blacksburg, VA (C. Heatwole, G. Desta, S. Kramer)
- 48 062050 **Dry Creek Long-Term Watershed Study: Effects Of Harvesting On Soil And Nutrient Movement Using The Mesh Bag Technique**, Crystal A. Spruill-Carter, Florida A&M Univ, Tallahassee, FL (C. Spruill-Carter, G. Bugna, Y.P. Hsieh, A. Jain, M. Miwa)
- 49 062051 **Effects Of Design Changes On Sediment Retention Basin Efficiency**, Melanie Markusic, North Carolina State University, Raleigh, NC (M. Markusic, R.A. McLaughlin)
- 50 062052 **A Methodology for the Optimal Dredge Amount Estimation to Maintain the Water Supply Capacity**, Taeil Jang, Seoul National University College of Agriculture and Life Sciences, Gwangak, South Korea (T. Jang, S. Kim, S. Park)
- 51 062053 **Investigating Soil Erosion - Evaluation Of The Protective Action Of Vetiver Grass Hedges**, Vito Ignazio Sardo, Catania, Italy (A. Hamdy, J. Wu, V. Sardo, A. Janushaj)
- 52 062054 **Lessons Learned Using Laboratory Jet Test Method To Measure Soil Erodibility Of Compacted Soils**, Gregory J. Hanson, USDAARS, Stillwater, OK (G.J. Hanson)
- 53 062055 **Monitoring Of Dust Emission At A Reclaimed Land And Its 3-D Aerodynamic Modeling**, Hyun-Seob Hwang, Seoul National University, Gwanak-gu, South Korea (H.-S. Hwang, I.-B. Lee, S.-W. Hong, I.-H. Seo)
- 54 062056 **The Effectiveness Of New Polymer Technologies On Reducing Soil And P Loss**, Adam L. Petersen, Univ of Wisconsin, Madison, WI (A. Petersen, A. Thompson)
- 55 062057 **The Effects Of Sedimentation Tank To Prevent Suspended Soil Runoff**, Tamotsu Nakandakari, The United Graduate School of Ag Sciences Kagoshima University, Nishihara-cho, Okinawa Japan (T. Nakandakari, A. Yoshinaga, K. Sakai, K. Oosawa)
- 56 062058 **Testing And Evaluation Of Nozzles For New Generation Rainfall Simulators**, Bradley R. Tadlock, Agco Corp, Jackson, MN (Brad Tadlock, P.K. Kalita, M.C. Hirschi, L.E. Bode)
- 57 062059 **Evaluation Of Compost Filter Socks In Sediment And Nutrient Reduction From Runoff**, Ali M. Sadeghi, USDAARS, Beltsville, MD (A.M. Sadeghi, K.A. Sefton, B. Faucette)
- 58 062060 **Flow-Through Rates And Evaluation Of Solids Separation Of Compost Filter Media Vs. Silt Fence In Erosion Control Applications**, Harold M. Keener, Ohio State Univ, Wooster, OH (H.M. Keener, B. Faucett, M. Klingman)
- 59 062061 **CANCELLED**
- 60 062062 **Comparison Of Three Phosphorus Watershed Transport Model Routines**, Colleen Green, USDAARS, Temple, TX - Presenter: Jeff Arnold; (C.H. Green, J.G. Arnold, J.R. Williams)
- 61 062063 **An Evaluation Of Various Types Of Permeable Pavement With Respect To Water Quality Improvement And Flood Control**, William F. Hunt, III, North Carolina State Univ, Raleigh, NC (K.A. Collins, W.F. Hunt, J.M. Hathaway)
- 62 062064 **A Simplified Urban Detention System For Stormwater**, John C. Hayes, Clemson Univ, Clemson, SC (B.J. Barfield, J.C. Hayes, S.L. Harp, M. Chalavadi)
- 63 062065 **Performance Of Low-Head Weirs For Enhancing Infiltration**, James M. Hamlett, Penn State Univ, University Park, PA (J.M. Hamlett, L.A.J. Fennessey, M.R. Ralston, R.E. Cooper)
- 64 062066 **The Green Topeka Project: Moving Towards A Greener Community**, Stacy L. Hutchinson, Kansas State Univ, Manhattan, KS (Stacy Hutchinson, Mauricio Pereira Ramirez, Reid Christianson)
- 65 062067 **A Review Of Available Predictive Equations For Bedload Transport: Case Study Using Published Data For The Main Fork Red River, Idaho**, Jason M. Zink, North Carolina University Biological and Agricultural Engineering, Mars Hill, NC (J.M. Zink)
- 66 062068 **Measurement And Modeling Of Sediment Transport In A Cohesive Stream In Northern Idaho**, Jeremy Newson, University of Idaho, Moscow, ID (J. Newson, E. Brooks, K. Ostrowski, J. Boll)
- 67 062069 **Goodwin Creek Experimental Watershed - Effect Of Conservation Practices On Sediment Load**, Ronald L. Bingner, USDAARS, Oxford, MS (R.A. Kuhnle, R.L. Bingner, C.V. Alonso, C. Wilson)
- 68 062070 **Recycled Plastic Composite Outlet Structure**, William J. Zacharias, USDANRCS, Pickerington, OH (W.J. Zacharias)
- 69 062071 **Optimal Economic Mainline Design**, Troy Peters, Washington State University, Prosser, WA (R. Troy Peters)
- 70 062072 **Design Of Irrigation Facility Using Evolutionary Structural Optimization**, Jin Sun Park, Chungbuk National University, Cheongju, South Korea (J.S. Park, S.S. Yoon, H.J. Kim, K. Suh, J.J. Lee)
- 71 062073 **Beyond Drip Irrigation - Hyper-Efficient Irrigation**, David A. Bainbridge, Alliant Intl University, San Diego, CA (D.A. Bainbridge)

72	062074	A Case Study About Effective Remaining Lifetime Prediction Of Irrigation Facilities, Han Joong Kim, Hankyung National University, Anseong, South Korea (H.J. Kim, S.S. Yoon, K. Suh, J.J. Lee)
73	062075	Hydrodynamic Design Of Straightening Vanes In Sprinkler'S Tube Using Cfd Analysis, Haijun Yan, China Agricultural University, Beijing, China (H. Yan)
75	062078	Computer Vision System ForAutomatic Control Of Precision Furrow Irrigation System Yik Lam, University of California, Davis, Davis, CA(Y. Lam, D.C. Slaughter, W W.Wallender, S.K. Upadhyaya)
76	062079	Leak Detection Of Irrigation Canals In The LowerRio Grande Valley Through Airborne Multispectral Remote Sensing Image Analysis, Yanbo Huang, Texas A&M Univ, College Station, TX (Y. Huang, G. Fipps, S. Maas, R. Fletcher)
77	062080	A Decision Tool ForManaging Risk In Irrigation, Juan Enciso-Medina, Texas A&M Univ, Weslaco, TX (J. Enciso, L. Ribera, J. Robinson, and W.Harman)
78	062081	Modeling Daily SolarRadiation Using Available Metrological Data In Ohio For Applications With Alternative Energy Sources ForMicro-Irrigation, Ahmed M. Al-Zohairy, Ohio State Univ, Columbus, OH (A.M. Alzoheiry, L.C. Brown, H. Keener, A. Soboyejo, M. Batte)
79	062082	Simulation Of Supplementary Irrigation ForMaize In The Rio Grande Do Sul State – Brazil ToAvoid Yield Reduction Due To Soil WaterDeficit, Mirta Terezinha Petry, Federal University of Santa Maria - RS, Santa Maria, Brazil (M.T. Petry, R. Carlesso, Cleudson J.Michelon,)
80	062083	Estimating Evapotranspiration And Crop Coefficients ForMature Citrus In Central Florida, Xinhua Jia, Univ of Florida, Gainesville, FL(X. Jia, M.D. Dukes, J.M. Jacobs)
81	062084	Crop Coefficient ForSeepage Irrigated Bell Peppers UnderPlastic Mulch Conditions, Fouad H. Jaber, Univ of Florida, Immokalee, FL(S. Shukla; S. Srivastava)
82	062085	Tomato Root Distribution As Affected By Pesticide Injection UnderSubsurface Drip Irrigation, Yd Yu, China Institute of Water Resources and Hydropower Research, New York, NYPeoples Republic of China (Y. Yu, S. Gong, Y. Li)
83	062086	Management Of Trickle Irrigation On Vineyard UnderControlled WaterDeficit, Giuseppe A. Provenzano, Universita Di Palermo, Palermo, Italy (G. Provenzano, D. Pumo, F. Blanda, G. Rallo)
84	062087	Irrigation Management Strategies ForPeanut Production Under Water-Limited Conditions, Dana O. Porter, Texas Agr Exp Station, Lubbock, TX (D.O. Porter, A.M. Schubert)
85	062088	Irrigation Management Of Potato Plants In Uruguay, Claudio Garcia, INIA, Montevideo, Uruguay (C. Garcia, R. Carlesso, F. Vilaró, R. Docompo)
86	062089	Production Of Lettuce (Lactuca Sativa, L.) UnderEffects Of Irrigation With Treated Wastewater, Tatiana L. Tavares, Federal University of Campina Grande, Fargó, ND Brazil (T. de Lima Tavares, A. König, B.S. Ovruski de Ceballos, M. R. de Queiroz Almeida Azevedo, R. Vieira Pordeus)
87	062090	Reuse Of Treated Municipal Wastewater With Drip Irrigation In Jordan, Garry Grabow, North Carolina State Univ, Raleigh, NC (G. L. Grabow, J. Pasch, D. Ammerman, A. Abu Awwad, G. Panzani)
88	062091	Treated WastewaterAnd Nitrogen: Effects On The Chemical Properties Of The Soil, Carlos Alberto Vieira de Azevedo, Universidade Federal de Campina Grande, Campina Grande, Paraíba Brazil (W.W. Albuquerque Alves, C.A. Vieira de Azevedo, J. Dantas Neto, V. L. Antunes de Lima, J. Wellington dos Santos)
89	062092	Chemical Quality Of The Soil AfterThe Use Of Wastewater Treated By Stabilization Pond, Carlos Alberto Vieira de Azevedo, Universidade Federal de Campina Grande, Campina Grande, Paraíba Brazil (T. de Lima Tavares, A. König, B.S. Ovruski de Ceballos, M.R. de Queiroz Almeida Azevedo, C.A. Vieira de Azevedo)
90	062093	Macronutrients In Soil And Lettuce AfterThe Irrigation With Effluents Of Stabilization Pond, Carlos Alberto Vieira de Azevedo, Universidade Federal de Campina Grande, Campina Grande, Paraíba Brazil (T. de Lima Tavares, A. König, B. Suzana Ovruski de Ceballos, M.R. de Queiroz Almeida Azevedo, F.A. Loureiro Soares)
91	062094	Effects Of The Irrigation With Treated WastewaterOn FodderCorn Production, Carlos Alberto Vieira de Azevedo, Universidade Federal de Campina Grande, Campina Grande, Paraíba Brazil (M.R. de Queiroz Almeida Azevedo, A. König, N.E. de Macêdo Beltrão, B.S. Ovruski de Ceballos, C.A. Vieira de Azevedo, T. de Lima Tavares)
92	062095	Effect Of Treated Wastewater, Nitrogen And Phosphorus On Quality Of The Brown FiberCotton, Carlos Alberto Vieira de Azevedo, Universidade Federal de Campina Grande, Campina Grande, Paraíba Brazil (W.W. de Albuquerque Alves, C.A. Vieira de Azevedo, R. C. Batista, J.D. Neto, N.E. de Macêdo Beltrão)
93	062096	Physical Quality Of Irrigated Soil Of Rio Grande Do Sul State - Brazil, Michelon J. Cleudson, Federal University of Santa Maria, Santa Maria, RS Brazil (R. Carlesso; C.J. Michelon, M.T. Petry; G. de David)
94	062097	Use Of Biosolid And Of Treated WastewaterIn The CastorOil Cropping And Their Residual Effects On The Edaphic Medium And On The Water, Carlos Alberto Vieira de Azevedo, Universidade Federal de Campina Grande, Campina Grande, Paraíba Brazil (F.X. Costa, F.A. Loureiro Soares, N.E. de Macedo Beltrão, V. L. A. de Lima, C.A. Vieira de Azevedo, J. Dantas Neto)
95	062331	Analysis of Stream Health Indicators forTMDLAssessment in Minnesota, Jason S. Ulrich, University of Minnesota, St. Paul, MN (J. Ulrich, U. Singh, B. Wilson, M. Kocian, B. Vondracek)
96	062332	Modeling the Effects of Deep Chiseling Within DRAINMOD forAlluvial Soils, Daniel N. Moriasi, USDAARS, Temple, TX (D.N. Moriasi, J. L. Fouss, R.L. Bengtson)

Monday, July 10 – 9:30AM-12:00PM

106-SW COMPUTER MODELS USED IN SOILAND WATER APPLICATIONS (Invited Speakers) (Sponsored by SW-25)

Moderator: Gregory J. Hanson, USDAARS, Stillwater, OK
Location: Exhibit Hall A
This is a special session where presenters will display their work during the poster session via computer.

POSTER #	PAPER #	PRESENTATION TITLE
95	062098	AnnAGNPS - A USDA Soil and Water Watershed Conservation Management Planning Tool, Ronald L. Bingner, USDAARS, Oxford, MS (R. Bingner, F. Theurer)
96	062099	CONCEPTS: A Process-Based Computer Model to Assess the Offsite Impact of Soil Erosion and Instream Conservation Measures, Eddy J. Langendoen, USDA-ARS, Oxford, MS (E. Langendoen)
97	062100	Use and Implementation of the RUSLE2 Soil Erosion Software, Daniel Yoder, Univ of Tennessee, Knoxville, TN (D. Yoder; S. Dabney; D. Lightle; D. McCool)
98	062101	SITES-WaterResource Site Analysis Computer Program, Morris Lobrecht, USDA-NRCS, Fort Worth, TX – Presenter: Darrel Temple (M. Lobrecht; L. Goerts; D. Temple; M. Neilsen)
99	062102	SWAT- An Environmental and Conservation Assessment Watershed Model, Colleen Green, USDAARS, Temple, TX – Presenter: Jeff Arnold (C.H. Green; J.G. Arnold)

100	062105	WaterErosion Prediction Project (WETP) Technology forAssessment of Runoff, Soil Loss, and Sediment Yield Potential, Dennis C. Flanagan, USDAARS NSERLPurdue Univ, West Lafayette, IN (D. Flanagan; J. Frankenberger; C. Meyer)
101	062104	WEPS: Wind Erosion Prediction System, Larry E. Wagner, USDAARS, Manhattan, KS (L. Wagner; J. Tatarko)
102	062105	WINDAM - Analysis of Overtopped Earth Embankment Dams, Darrel Martin Temple, USDAARS, Stillwater, OK (D. Temple; G. Hanson; S. Hunt; M. Neilsen)
103	062106	WinPond - Field Application forPond Design, Tony G. Funderburk, US DANRCS, TX (T. Funderburk; D. Hoffman; J. Green; P. Oakes; O. Kvittum; P. Smith; D. Meyer; J. Allred; S. Schneider; K. Carpenter; N. Herbert; Q. Quan; D. Nelson; J. Evans; D. Dishman; C. Houston)
104	062107	WinTR55-Small Watershed Hydrology Model, Jolyne Lea, USDA- NRCS, Belton, TX (J. Lea; T. Funderburk; C. Scheer; Q. Quan; H. Moody; W. Merkel; L. Foreman; K. Visser; A. McNeil; J. Werner)
105	062108	Field and Pond Hydrology Analyses with the SPAWModel, Keith E. Saxton, Self Employed-Consulting, Pullman, WA(K. Saxton)

INFORMATION & ELECTRICAL TECHNOLOGIES

Monday, July 10 – 9:30AM-12:00PM

107-IET-1 APPLICATION OF NUMERICAL METHODS IN FOOD PROCESS ENGINEERING (Sponsored by IET-217, FPE-703)

Moderator: Virendra M. Puri, Penn State Univ, University Park, PA
Location: C126

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	063001	Development of CFD Structural Fumigation Models forPredictions of Fumigant Movement and Half-Loss Time, Watcharapol Chayaprasert, Purdue University, West Lafayette, IN (W.I Chayaprasert; D.E Maier; K. Iileleji; J. Murthy)
9:50AM	063002	Estimating Trace Metals in Chinese Rice Wine by NearInfrared Spectroscopy, Yibin Ying, Zhejiang Univ, Hangzhou, Zhejiang, Peoples Republic of China (Y. Ying, H. Yu, Y. Zhou, L. Xie)
10:05AM	063003	Heat and mass transfer modeling of apple underinfrared simultaneous Dry-Blanching and Dehydration Process, Yaling Lin, Univ of California, Davis, CA(Y. Lin, Z. Pan, S. Li)
10:20AM	063004	Simultaneous Determination of Rate Constants forMutarotation and Hydrolysis of Lactose with a Glucose Electrode, Daniel M. Jenkins, Univ of Hawaii, Honolulu, HI (M.J. Teruel, D.M. Jenkins)
10:35AM		Break
10:45AM	063005	Modelling the Drying Process in Durum Wheat Pasta, Jeroen R. De Temmerman, Katholieke Universiteit Leuven, Heverlee, Belgium (J. De Temmerman; B. De Ketelaere; P. Verboven; B. Nicolai, H. Ramon)
11:00AM	063006	Modeling Microwave Heating in Blocks, Cylinders and Spheres, Graham Brodie, Univ of Melbourne, PO Dookie, Australia (G. Brodie)
11:15AM	063007	Moisture Sorption Isotherms of Sugarcane, Palmyra and Date Palm Jaggery, Susanta Kumar Das, Indian Institute of Tech, Kharagpur, India (P V K Jagannadha Rao, M. Das, S K Das)

Monday, July 10 – 9:30AM-12:00PM

108-IET-14 MACHINE VISION FOR PRECISION AGRICULTURE

(Sponsored by IET-312, PM-54)
Moderator: Won Suk (Daniel) Lee, Univ of Florida, Gainesville, FL
Location: C125

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	063008	Estimation of GPS Locations of Machine-Viewed Scenes Using Attitude Sensor, Chi Ngoc Thai, Univ of Georgia, Athens, GA(C.N. Thai, S.T. Jones, G. Rains, S. Pocknee)
9:50AM	063009	Feasibility of using Polarizing Filter to Reduce Halation Effects during Image Acquisition in the Field, Kentaro Nishiwaki, Natl Ag Research Center for Tohoku Region, Urbana, IL(K. Nishiwaki, N. Kondo, M. Kise, Q. Zhang, T. Grift, L. Tian, K. C. Ting)
10:05AM	063014	Detection of Bruises in Strawberries Using Hyperspectral Imaging, Jasper G. Tallada, University of Miyazaki, Miyazaki, Japan (J. Tallada, M. Nagata, T. Kobayashi)
10:05AM	063010	Citrus Yield Mapping System in Natural Outdoor Scenes using the Watershed Transform, Radnaabazar Chinchuluun, Gainesville, FL(R. Chinchuluun, W.S. Lee)
10:20AM	063096	Remotely-Piloted Helicopter Citrus Yield Map Estimation, Donald MacArthur, Univ of Florida, Gainesville, FL– Presenter: Sharath Cugati (D. MacArthur; J. Schueller)
10:35AM		Break
10:45AM	063097	Development of Autonomous Unmanned Helicopter-Based Agricultural Remote Sensing System, Haitao Xiang, Univ of Illinois, Urbana, IL(X. Haitao; L. Tian)
11:00AM	063011	Machine Vision-Based Variable Rate Spraying System for Precision Weed Control, Mao Wenhua, Chinese Agr Univ, Beijing, Republic of China (W. Mao, X. Zhang, X. Hu, J. Cao)
11:15AM	063098	Reconstruction of a Virtual 3D Field Scene from Ground-based Multi-Spectral Stereo Imagery, Michio Kise, USDA-ARS, Athens, GA(M. Kise; Q. Zhang)

Monday, July 10 – 9:30AM-12:00PM

109-IET-20A HYPERSPECTRAL AND MULTISPECTRAL IMAGING - PART 1 (Sponsored by IET-348, IET-312)

Moderator: Bosoon Park, USDAARS, Athens, GA
Location: C124

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	063012	Partial Least Squares Modeling of Wetland Pant Hyperspectral Reflectance for Heavy Metal Detection, David R. Tilley, Univ of Maryland, College Park, MD (L. Schumann, A. Baldwin)
9:50AM	063013	Design and Validation for Laser Based Scanning Reflectometer, Roshani S. Jayasekara, Oklahoma State Univ, Stillwater, OK (R. Jayasekara, M. Stone, S. Solie)
10:05AM	064003	Improving Solids Flow in Bins and Hoppers Using the Diamondback Hopper, Kristin M. O'Quest, Diamondback Technology Inc, Atascadero, CA(J. Ririe)

- 10:20AM 065015 **Detection of Corn Plant Population Using Aerial Hyperspectral Remote Sensing Imagery**, Kelly R. Thorp, Iowa State Univ, Ames, IA(K. Thorp, B. Steward, W. Batchelor, A. Kaleita, D. Shrestha)
- 10:35AM **Break**
- 10:45AM **MOVED TO POSTERSESSION**
- 11:00AM 063017 **Development of Total Transmittance Calibration Technique for Hyperspectral Imaging**, Seung-Chul Yoon, USDAARS, Athens, GA— Presenter: Kurt Lawrence (S. Yoon, B. Park, K. Lawrence, R. Windham)
- 11:15AM 063018 **Hyperspectral Imaging for Detecting Surface Defects on Tomatoes**, Juan Xing, Katholieke Univ of Leuven, Heverlee, Leuven Belgium (J. Xing, J. de Baerdemaeker)
- 11:30AM 063019 **Textural Analysis of Hyperspectral Images for Improving Detection Accuracy**, Bosson Park, USDAARS, Athens, GA(B. Park, K. Lawrence, R. Windham, D. Smith)

- 10:05AM 064020 **A Comparison of Three Treatment Systems for the Suppression of Pythium aphanidermatum in Continuous Production of Hydroponic Babyleaf Spinach**, Timothy J. Shelford, Cornell Univ, Ithaca, NY(T. Shelford, D. deVilliers, R. Langhans, L. Albright)
- 10:20AM **Break**
- 10:30AM 064021 **The Impact of Modified Atmosphere Treatment for Arthropod Pest Control on Plant Health**, Joey H. Norikane, Univ of Kentucky, Lexington, KY(Norikane, Anderson, Gates, Dunn)
- 10:45AM 064022 **A Hybrid Hydroponic and Aquaculture System**, Jon Jordan, The University of Arizona, Tucson, AZ (J. Jordan, K. Fitzsimmons, J.L. Cuello)
- 11:00AM 064023 **Growth of Three Dwarf Corn under Spectrum Enhanced High Intensity Discharge Lamps in a Controlled Environment**, Yang Yang, Univ of Maryland, Beltsville, MD (Y. Yang, G.D. Massa, D.W. Ausenbaugh, C.A. Mitchell)

STRUCTURES AND ENVIRONMENT

Monday, July 10 – 9:30AM-12:00PM

110-SE-1 BULK SOLIDS STORAGE (Sponsored by SE-20)

Moderator: Michael D. Montross, Univ of Kentucky, Lexington, KY
Location: B110

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 064001 | A Theoretical Model for Predicting Vibration-Induced Loads , Qiang Zhang, Univ of Manitoba, Winnipeg, MB Canada (X. Cheng, Q. Zhang) |
| 9:50AM | 064002 | Experimental Tests to Validate Numerical Models in Silos Design , Francisco Ayuga, Ciudad Universitaria S/N, Madrid, Spain – Presenter: Pedro Aguado (F. Ayuga, P. Aguado, E. Gallego, A. Ramirez) |
| 10:05AM | 064003 | Improving Solids Flow in Bins and Hoppers Using the Diamondback Hopper , Kristin M. O'Quest, Diamondback Technology Inc., Atascadero, CA (J. Ririe) |
| 10:20AM | 064004 | Segregation in Blended Fertilizers , Anjani Kumar Jha, The Pennsylvania State Univ, University Park, PA (A.K. Jha, V.M. Puri) |
| 10:35AM | | Break |
| 10:45AM | 064005 | Uniformity Evaluation of Different Filling Methods for Deposition of Powders in Containers , Saed Sayyar Roudsari, Virendra M Puri, State College, PA (S. Sayyar Roudsari and V. M. Puri) |
| 11:00AM | 064006 | Development of the Dircular, Corrugated, Galvanized Steel Grain Bin , Dexter W. Johnson, Fargo, ND |
| 11:15AM | 064007 | Model Development and Verification of Simultaneous Powder Deposition in Three Parallel-Oriented Cylindrical Containers , Xinsheng Xie, Penn State Univ, University Park, PA (X. Xie, V. M. Puri) |
| 11:30AM | 064008 | An Analytical Solution to Janssen's Equation Using Variable Material Properties , George Day, Browning Mfg Div, Maysville, KY (G.B. Day V, I.J. Ross, M.D. Montross, R.S. Gates) |

Monday, July 10 – 9:30AM-12:00PM

111-SE-5 ENVIRONMENTAL IMPACT ON ANIMAL WELLBEING

(Sponsoring Committee: SE-301, SE-413)
Moderator: Angela R. Green, Iowa State Univ, Ames, IA
Location: B111

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | 064204 | Modelling the Animal, Environment, and Management Components of Livestock Stress , Tami M. Brown-Brandl, USDAARS-MARC, Clay Center, NE (D.D. Jones, J.B. Gaughan) |
| 9:50AM | 064010 | Construction of a Low-Cost GPS Herd Activity and Welfare Kit (GPS HAWK) for Livestock Monitoring , Jeremiah D. Davis, Iowa State Univ, Ames, IA (M.J. Darr, H. Xin, J.D. Harmon) |
| 10:05AM | 064011 | Development of Novel Method to Remotely Monitor Water Consumption in Ruminant Livestock , Jeremiah D. Davis, Iowa State Univ, Ames, IA (H. Xin, J.D. Harmon) |
| 10:20AM | 064012 | A Review of Current Housing Schemes for Laying Hens , Angela R. Green, Iowa State Univ, Ames, IA (H. Xin) |
| 10:35AM | | Break |
| 10:45AM | 064013 | Study on Ventilation System of Naturally Ventilated Broiler House by Aerodynamic Approach , ILHwan Seo, Seoul National University, Seoul, South Korea (I.-B. Lee, H.-S. Hwang, S.-W. Hong) |
| 11:00AM | 064014 | Assessing Thermal Comfort of Broiler Chicks during Brooding , Joseph L. Purswell, USDAARS, Starkville, MS (J.L. Purswell; B.D. Lott, W.A. Dozier; W.B. Roush, S.L. Branton) |
| 11:15AM | 064015 | Relationship Between Skin Temperature and Behaviour of Growing Pigs , Heidi M. Andersen, SKOVA/S, Skive, Denmark |
| 11:30AM | 064016 | Evaluation of the Thermal Comfort of Goats Reared in Deep Bedding Systems in the Southeast of Brazil , Claudia R. Santos, Universidade Federal de Vicosa, Vicosa, Brazil (C. de Fátima Souza, I. de Fátima Ferreira Tinóco, H. Vieira Mendonça, M.C. de Carvalho Guimarães) |
| 11:45AM | 064017 | Tolerance of Atmospheric Ammonia by Laboratory Mice , Angela R. Green, Iowa State Univ, Ames, IA (A.R. Green, C.M. Wathes, T.G.M. Demmers, J. MacArthur-Clark, H. Xin) |

Monday, July 10 – 9:30AM-12:00PM

112-SE-7 CONTROLLED ENVIRONMENT PLANT PRODUCTION SYSTEMS (Sponsored by SE-303, ASHRAE TC2.2, SE-406)

Moderator: Yang Yang, Univ of Maryland, Beltsville, MD
Location: B112

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 064018 | Automated Irrigation Control Using Feed-Back Moisture Sensors in a Gravity-Independent Crop Production System , Jessica J. Prenger, Waterborne Environmental Inc., Savoy, IL (J.J. Prenger, D. Rouzan-Wheeldon, K.A. Burtess, H.G. Levine) |
| 10:05AM | 064026 | Hydrogen Sulfide Emissions from Beef Feedlots & Dairy Corrals in the Southern Great Plains , Kenneth D. Casey, Texas Agricultural Experiment Station, Amarillo, TX (K. Casey, D. Parker, J. Sweeten, S. Mukhtar, J. Koziel) |

Monday, July 10 – 9:30AM-12:00PM

113-SE-10 TECHNOLOGIES FOR CHARACTERIZING AND MITIGATING EMISSIONS FROM FUGITIVE SOURCES

(Sponsored by SE-305)
Moderator: Saqib Mukhtar, Texas A&M Univ, College Station, TX
Location: B113

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 064024 | Dust Emissions From Cotton Farming Operations , David R. Miller, Univ of Connecticut Dept of Natural Resource Management and Engr, Fort Bragg, CA (D.R. Miller, B. A. Holmén, A. L. Hiscoc, W. Yang, J. Wang, T. Sammis, R. Bottoms) |
| 9:50AM | 064025 | Evaluating the Use of Reference Evapotranspiration Data as an Estimator of Feedyard Evaporation , Gary W. Marek, Texas Agricultural Experiment Station, Bushland, TX (G.W. Marek; B.W. Auvermann, T.H. Marek, K. Heflin) |
| 10:20AM | | Break |
| 10:30AM | 064027 | Aerobic Biofilter Performance Monitoring for Gas Treatment of Headspace above Slurry in Swine Manure Holding Tanks , Guilherme Maia, Univ of Kentucky, Lexington, KY (G.D.N. Maia, R.S. Gates) |
| 10:45AM | 064028 | National Assessment of Methane Emissions from Livestock and Poultry Manure , David C. Moffitt, USDANRCS, Fort Worth, TX (D.C. Moffitt, R. Kellogg) |

Monday, July 10 – 9:30AM-12:00PM

114-SE-15 DAIRY HOUSING AND MANAGEMENT (Sponsored by SE-403)

Moderator: Leslie A. Anderson, Curry-Wille & Assoc, Roland, IA
Location: B114

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 064029 | Determination of Optimum Pre-Engineered Steel Freestall Configuration , Chris Roberson, Prime Metal Buildings, Dublin, TX (C. Roberson, M.I. Mitchell, T. Kator) |
| 9:50AM | 064030 | Developing a Sustainability Master Plan for a Large Organic Dairy , Jose R. Bicudo, CH2M Hill Canada, Waterloo, ON Canada – Presenter Jan Allen (J.R. Bicudo, L.N. Grice, J. Allen, P. Neuville, J. Dickey, R. Roxburgh, L. Morse, J. Pries, P. Vanderbilt, C. Bagnall, T. Barthoff, M. Majeune) |
| 10:05AM | 064031 | Compost Barns: an Alternative Dairy Housing System in Minnesota , Kevin A. Janni, Univ of Minnesota, St Paul, MN (K.A. Janni, M.L. Endres, J.K. Reneau, W.W. Schoper) |
| 10:20AM | 064032 | Florida Tunnel Ventilated Freestall Barn Case Study , Ted A. Gribble, Five G Consulting, Reno, TX (T.A. Gribble) |
| 10:35AM | 064033 | Comparison of High Volume Low Speed (HVLS) vs. Conventional Fans in a Free Stall Dairy Barn in a Hot Humid Climate , John W. Worley, Univ of Georgia, Athens, GA (J.W. Worley, J.K. Bernard) |
| 10:50AM | | Break |
| 11:00AM | 064034 | Design Information for Housing Special Dairy Cows , Robert E. Graves, Penn State Univ, University Park, PA (R.E. Graves, R. Engle) |
| 11:15AM | 064035 | Water Use and Savings on a Dairy Farm , Michael F. Brugger, Ohio State Univ, Wooster, OH (M. Brugger, C. Vandemark, B. Dorsey III) |
| 11:30AM | 064036 | Factors Affecting Milking Parlor Selection for a New Dairy Facility , Michael C. Mitchell, EAC Engineering, Turlock, CA (M. Mitchell, T. Kator, J. Ramos, M. Sanders, M. Miranda) |
| 11:45AM | 064037 | Automatic Cow Health Measurement System in a Milking Robot , Matti E. Pastell, Univ of Helsinki, Helsinki, Finland (M. Pastell, A.-M. Aisla, M. Hautala, V. Poikalainen, J. Praks, I. Veermäe and J. Ahokas) |

ERGONOMICS, SAFETY & HEALTH

Monday, July 10 – 9:30AM-12:00PM

115-ESH-4 TECHNOLOGIES FOR FARMERS AND RANCHERS WITH DISABILITIES

(Sponsored by ESH-04/02)
Moderator: Mark E. Novak, Univ of Wisconsin, Madison, WI
Location: A109

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | 065001 | Development and Validation of a Self-Assessment Tool for Hazard Identification in Tractor Cabs with Modified Controls , Sarah A. Kelso, Univ of Manitoba, Winnipeg, MB Canada (S.A. Kelso, D.D. Mann) |
| 9:50AM | 065002 | Safety and Standards Considerations When Modifying Machinery Controls , Timothy George Prather, Univ of Tennessee, Knoxville, TN (T.G. Prather) |
| 10:05AM | 065003 | Development of New Harvesting Equipment for Disabled Aquaculture Growers , James L. Glancey, Univ of Delaware, Newark, DE (J. Armstrong, G. Stewart, R. Jester, J. Glancey) |
| 10:20AM | 065004 | A Proposed SAE Standard for Access Systems on Off-Road Machines for Workers with Disabilities , Aaron M. Yoder, Penn State Univ, University Park, PA (A.M. Yoder, W.E. Field) |
| 10:35AM | | Break |
| 10:45AM | 065005 | Evolution of 'The Toolbox' Assistive Technology Manuals and Database for Agricultural Workers with Disabilities , Paul J. Jones, Purdue Univ, West Lafayette, IN (P.J. Jones, W.E. Field) |

- 11:00AM 065006 **Strategies for Dissemination of Information on Technologies for Farmers with Disabilities**, Clifford W. Racz, Purdue Univ, West Lafayette, IN (C. Racz, W.E. Field)
- 11:15AM 065007 **Undergraduate Engineering Student Experiences with Assistive Technology Design**, Ronald T. Schuler, Univ of Wisconsin, Madison, WI (M.E. Novak, R.T. Schuler)

- 11:00AM 066024 **Study of High Intensity Electric Field for Liquid Food Pasteurization**, Shaobo Deng, Univ of Minnesota, St Paul, MN (S. Deng, R. Ruan, H. Lei, X. Lin, P. Chen)
- 11:15AM 066025 **Ohmic Heating for Milk Pasteurization**, Hui-Xian Sun, Hokkaido Univ, Sapporo, Hokkaido, Japan (H.-x. Sun, S. Kawamura, J.-i. Himoto, T. Wada)
- 11:30AM 066026 **The Effect of Power Direct Ultrasound On Microbial Count of Date Syrup**, Simin Haghazari, Zanjan University, Zanjan, Iran (M. Rahimi zadeh, J. Weis)
- 11:45AM 066191 **Yeast Detection in Apple Juice using Raman Spectroscopy**, Amos Mizrach, Agricultural Research Organization, Bet Dagan, Israel (A. Mizrach; Z. Schmilovitch; R. Korotic; J. Irudayaraj; R. Shapira)

FOOD & PROCESS ENGINEERING INSTITUTE

Monday, July 10 – 9:30AM-12:00PM

116-FPE-2 PHYSICAL PROPERTIES OF AGRICULTURAL PRODUCTS IN RELATION TO PROCESSING (Sponsored by FPE-701)

Moderator: Lope G. Tabil, Jr, Univ of Saskatchewan, Saskatoon, SK Canada
Location: B118

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|--|
| 9:30AM | | Introduction |
| 9:35AM | 066001 | Effects of Development on Texture and Cutting Quality of Small Radishes , Werner B. Herppich, Institute of Agricultural Engineering Bornim (ATB), Potsdam-Bornim, Germany (W.B. Herppich, B. Herold, M. Geyer, O. Schlüter) |
| 9:50AM | 066002 | Effects of Species and Ratios on Physical and Chemical Properties of Polished Adlays Extrudates , Jinchyau Peng, Natl Chung Hsing Univ, Taichung, Taiwan (J. Peng, S.-h. Yang, W.-b. Lui) |
| 10:05AM | 066003 | Image Processing to Create a Realistic 3D Model of Apple Based on Its Slices , Jalal Kafashan, Katholieke Univ of Leuven, B-3001 Heverlee, Belgium – Presenter: Abdoul Mounem Mouazen (J. Kafashan, B. Tijskens, D. Moshou, A.M. Mouazen, J. De Baerdemaeker, H. Ramon) |
| 10:20AM | 066004 | CANCELLED |
| 10:35AM | 066005 | Rheological Properties of Batter Systems with Hydrocolloids , Xue Jun, McGill Univ, Macdonald Campus, Ste-Anne-de-Bellevue, QC Canada – Presenter: Michael Ngadi (J. Xue, M. Ngadi) |
| 10:50AM | | Break |
| 11:00AM | 066006 | Some Physical and Aerodynamics Properties of Three Nigerian Cereal Crops as Related to Their Cleaning , Emmanuel Atooj Ajav, Univ of Ibadan, Ibadan, Nigeria (E.A. Ajav, Ojediran, J.O.) |
| 11:15AM | 066007 | Temperature-Dependent Behavior of Microwave Dielectric Properties of Bound Water in Grain , Samir Trabelsi, USDAARS, Athens, GA (S. Trabelsi, S. Nelson) |
| 11:30AM | 066008 | Test for Success , Kristin M. O'Quest, Diamondback Technology Inc, Atascadero, CA (K. Dudley, L. Dudley) |
| 11:45AM | 066009 | Determination of Morphological and Textural Features of a Sample of Rice Grains using Digital Image Processing (DIP) Technology , Satish Bal, Indian Institute of Tech, West Bengal, India (A. Maqsood, C.P. Pratyush, S. Bal, T.K. Basu) |

Monday, July 10 – 9:30AM-12:00PM

117-FPE-6 RICE STORAGE AND PROCESSING (Sponsored by FPE-702)

Moderator: Michael D. Montross, Univ of Kentucky, Lexington, KY
Location: B117

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 066010 | Development of a System for Fine Cleaning of Rough Rice for High-Quality Storage , Shuso Kawamura, Hokkaido Univ, Sapporo, Japan (S. Kawamura, K. Takekura, J.-i. Himoto) |
| 9:50AM | 066011 | Drying Rates of Thin Layer Rough Rice Drying Using Infrared Radiation , Ragab K. Abd El-Kader, Univ of California, Davis, CA (R. Khir, Z. Pan, A. Salam) |
| 10:05AM | 066012 | Power Ultrasound Enhanced Soaking and Gelatinization Procedure for Rough Rice Parboiling , Wade W. Yang, Alabama A&M Univ, Normal, AL (P. Wambura, W. Yang, Y. Wang) |
| 10:20AM | 066013 | Rough Rice Fissure Resistance- Correlating Measured Fissuring with Simulated Internal Moisture Gradient , Prahlad Jat, Univ of Arkansas, Fayetteville, AR (P. Jat, G. S. Osborn) |
| 10:35AM | 066014 | Quality of Long-Grain Rice Dried by High Temperature Fluidization , Terry J. Siebenmorgen, Univ of Arkansas, Fayetteville, AR (E.E. Truitt, T.J. Siebenmorgen) |
| 10:50AM | | Break |
| 11:00AM | 066015 | Determination of Maximal Percent Points of Moisture Removal With or Without Tempering during Rough Rice Drying , Wade W. Yang, Alabama A&M Univ, Normal, AL (W. Yang, Q. Zhang, J. Anderson) |
| 11:15AM | 066016 | Development of Dried Yield Rate Tester for Wet Rice with Kernel Husk Ratio , Dai-chyi Wang, De Lin Institute of Technology Dept of Mechanical Engineering, Tu-chen, Taiwan (D.-c. Wang, D.-s. Fon) |
| 11:30AM | 066017 | Optimum Strategy for Whole Longan Drying , Aree Acharyaviriyaa, Chang Mai University Mechanical Eng Dept, Chiang Mai, Thailand (A. Acharyaviriyaa, P. Nuthong) |
| 11:45AM | 066018 | Determination of Moisture Diffusivity of Parboiled Paddy by Thermogravimetric Analysis , Pavuluri Rao Srinivasa, Indian Institute of Tech, Kharagpur, India (P.S. Rao, S. Bal, T.K. Goswami) |

Monday, July 10 – 9:30AM-12:00PM

118-FPE-10 FOOD SAFETY ENGINEERING (Sponsored by FPE-703)

Moderator: Ali Demirci, Penn State Univ, University Park, PA
Location: B116

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 066019 | CANCELLED |
| 9:50AM | 066020 | Predicting the Survival of Escherichia coli O157:H7 in Dry Fermented Sausage Using Artificial Neural Networks , Anandakumar Palanichamy, Univ of Manitoba, Winnipeg, MB Canada – Presenter: Digvir Jayas (A. Palanichamy, D.S. Jayas, R.A. Holley) |
| 10:05AM | 066029 | Experimental Study of a Downdraft Gasifier , Lin Wei, Mississippi State Univ, Starkville, MS (L. Wei, A. Thomasson, M. Bricka, E. Columbus, W. Batchelor, R. Sui) |
| 10:05AM | 066021 | Aqueous Ozone Treatment for the Decontamination of Small Fruits , Ali Demirci, Penn State Univ, University Park, PA (K.L. Bialka, A. Demirci) |
| 10:20AM | 066022 | Date Syrup Affects on Fungal Counts by its Own Antimicrobial Components , Jochem Weiss, Univ of Massachusetts, Amherst, MA (S. Haghazari, M.H. Entezari, J. Weiss) |
| 10:35AM | | Break |
| 10:45AM | 066023 | A Systems Approach to the Identification of Problems in the Application of Radio-Frequency Identification (RFID) to Meat Traceability: A Case Study , Gashaw Ayalew Gobeze, Univ College Dublin, Dublin, Ireland (G. Ayalew, K. McDonnell, F. Butler, S.M. Ward) |

Monday, July 10 – 9:30AM-12:00PM

119-FPE-18 BIOFUELS DEVELOPMENT RESEARCH - PART 1

(Sponsored by FPE-709)
Moderator: Kent D. Rausch, Univ of Illinois, Urbana, IL
Location: B115

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 066027 | Analysis of Shelled Corn as an Agri-Fuel - Direct Combustion vs. Ethanol , Harold M. Keener, Ohio State Univ, Wooster, OH (H.M. Keener, M.H. Wicks, K.E. Draper) |
| 9:50AM | 066028 | Performance, Combustion and Emission Characteristics of Compression Ignition Engine Fueled with Ethanol – Diesel Microemulsions , Chandan Kumar, Sri Mata Vaishno Devi University Indian Institute of Technology Delhi, Udhampur, Jammu & Kashmir India (C. Kumar, Y.V. Aghav, M.K. Gajendra Babu, L.M. Das) |
| 10:05AM | 067003 | Dilute Acid Pretreatment and Enzymatic Hydrolysis of Saline Biomass for Sugar Production , Yi Zheng, Univ of California, Davis, CA (Y. Zheng, Z. Pan, R. Zhang, D. Wang, J. Labavitch, B.M. Jenkins) |
| 10:20AM | 066030 | Performance of a Unique Downdraft Gasifier , Krushna N. Patil, Oklahoma State Univ, Stillwater, OK (K.N. Patil, R.L. Huhnke, D.D. Bellmer) |
| 10:35AM | 066031 | Gasification as Remedial Energy Conversion Strategy for Saline Irrigated Biomass: Downdraft Gasification with Athel and Eucalyptus , Rizaldo E. Aldas, Univ of California Davis, Davis, CA (R.E. Aldas, S.L. Blunk, B.M. Jenkins) |
| 10:50AM | | BREAK |
| 11:00AM | 066032 | Dimethyl Ether (DME) Production for Liquid Fossil Fuel Displacement using Biobased Methane, Residues and Syngas , Stefan J. Minott, Cornell Univ, Ithaca, NY (S.J. Minott, N.R. Scott) |
| 11:15AM | 066033 | Improving Quality and Quantity of Oil Produced from Direct Liquefaction of Biomass , Jason S. Midgett, Louisiana State Univ, Baton Rouge, LA (J. Midgett) |
| 11:30AM | 066034 | Thermalchemical Conversion of Swine Manure to Oil in a Batch Reactor , Shuangning Xiu, Champaign, IL (S.N. Xiu, Y.H. Zhang, B.M. Li) |
| 11:45AM | 066035 | Novel Catalytic Approaches for Bio-Oil Upgrading , Courtney A. Fisk, Univ of Kentucky, Lexington, KY (C. Fisk, C. Crofcheck, M. Crocker, S. Lewis, J. Storey) |
| 12:00PM | 066036 | An Integrated Analysis of Energy, Mass and Nutritional Balances of An Integrated Biofuels and Dairy Feeding System in Wisconsin , Jenifer Hermans, Univ of Wisconsin, Madison, WI (J. Hermans, D. Reinemann, L. Armentano, M. Wattiaux, R. Fortenberry) |

BIOLOGICAL ENGINEERING

Monday, July 10 – 9:30AM-12:00PM

120-BE-10 CHALLENGES IN LIGNOCELLULOSIC CONVERSION

(Sponsored by BE-28, FPE-707, FPE-709)
Moderator: Mari S. Chinn, North Carolina State Univ, Raleigh, NC
Location: C122

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 067001 | Screening Protocol for Bioethanol Production from Lignocellulosics , Nick J. Nagle, DOE National Renewable Energy, Golden, CO – Presenter: Frederick Michel Jr. (N. Nagle, F.C. Michel, Jr., N. Weiss, R. Elander) |
| 9:50AM | 067002 | Pretreatment Optimization for Ethanol Production from Recycled Office Paper , Frederick C. Michel, Jr, Ohio State Univ, Wooster, OH (F.C. Michel, Jr., N. Weiss, N. Nagle, R. Elander) |
| 10:20AM | 067004 | Application of Iodoform in Corn Stover BEPCS System , Patrick T. Murphy, Iowa State Univ, Ames, IA (P.T. Murphy, K.J. Moore, C.J. Bern, T.J. Brumm, T.L. Richard) |
| 10:35AM | 067005 | Metabolic Model Development for Clostridium Thermocellum: a Thermophilic Anaerobe Capable of Converting Lignocellulose to Ethanol , Bless Adotey, Lexington, KY (B. Adotey, S.E. Nokes, H.J. Strobel) |
| 10:50AM | | Break |
| 11:00AM | 067006 | Bioconversion of Lignocellulosic Waste from Tequila Manufacture into Valuable Bioplastics , Mark R. Riley, Univ of Arizona, Tucson, AZ (L.E. A. Muñoz, M.R. Riley) |
| 11:15AM | 067007 | Effect of d-limonene on the Fermentation of Citrus Peel Waste , Mark R. Wilkins, Oklahoma State Univ, Stillwater, OK (M.R. Wilkins, K. Grohmann, W.W. Widmer) |
| 11:30AM | 067008 | Isolation and Adhesive Properties of Soybean Conglycinin Subunits , Xiaouqun Amy Mo, Kansas State Univ, Manhattan, KS (X. Mo, D. Wang, X.S. Sun) |
| 11:45AM | 067009 | Pretreatment Methods for Vermicomposting of Poultry Litter , Arab Amy Khan, Oklahoma State Univ, Stillwater, OK (A.A. Khan, D.W. Hamilton) |
| 12:00PM | 067010 | Testing a Model of the Effectiveness of an Electric Field at Repelling Earthworms from an Organic Media , Hala I. Chaoui, Ohio State Univ, Columbus, OH (H. Chaoui, H. Keener) |

Monday, July 10 – 9:30AM-12:00PM

121-BE-2 APPLICATION OF FEOCOLOGICAL ENGINEERING

(Sponsored by BE-22)
Moderator: Stacy L. Hutchinson, Kansas State Univ, Manhattan, KS
Location: C123

- | TIME | PAPER # | PRESENTATION TITLE |
|---------|---------|---|
| 9:30AM | | Introduction |
| 9:35AM | 067012 | Testing of Engineered Concrete for Biologically Dominated Coastal Restoration Mechanisms , Steven G. Hall, P.E., Louisiana State Univ, Baton Rouge, LA (S. Hall, T. Ortego) |
| 9:50AM | 067013 | Assessment of Ecological Impacts of Military Maneuvers in Training Areas , Matthew K. Rice, Univ of Tennessee, Unicoi, TN (A.B. Anderson, P.D. Ayers, M.K. Rice, C. Wu) |
| 10:05AM | 067014 | Methane Production & Water Quality Improvements in Agricultural Biogasifiers in Costa Rica , Jay F. Martin, Ohio State Univ, Columbus, OH (S. Lansing, R. Botero, J.F. Martin) |

10:20AM	06/015	Effects of Wastewater Application on Poplar Trees , Marsha L. Roberts, Kansas State Univ, Manhattan, KS (M. Roberts)
10:35AM		Break
10:45AM	067016	Assessing the Use of Poplars for Hydraulically Controlling a Groundwater Plume , Laura E. Christianson, Kansas State Univ, Manhattan, KS (L. Christianson, S.L. Hutchinson)
11:00AM	067017	Phytoremediation of Fluorinated Pollutants by Duckweed , Dawn M. Reinhold, Georgia Inst of Tech, Atlanta, GA (D. Reinhold, F.M. Saunders)
11:15AM	067018	Treatment of Dairy wastewater with an Ecological Treatment System , Jay F. Martin, Ohio State Univ, Columbus, OH (J. Morgan, S. Lansing, J. Martin)

EDUCATION

Monday, July 10 – 9:30AM-12:00PM

122-ED-1A INNOVATIONS IN EDUCATION PART 1 (Sponsored by ED-1)

Moderator: Ann D. Christy, Ohio State Univ, Columbus, OH
Location: B119

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	068001	Assessing Perceptions of Education: a Case for Increased Interdisciplinarity , Julie A. Graf, Ohio State Univ, Columbus, OH (J.A. Graf, A.D. Christy)
9:50AM	068002	Assessing Students' Learning and Decision-Making Skills Using Improved Computational Tools , Akilah R. Martin, Purdue University, Lafayette, IN (A. Martin, R.H. Mohr, B. French, B. Engel, G. Rochon)
10:05AM	068003	Engineering Education and Public Policy in the Wake of Hurricane Katrina , Marybeth Lima, Louisiana State Univ, Baton Rouge, LA (M. Lima)
10:20AM		Break
10:30AM	068004	Recruitment and Retention of Agricultural and Biological Engineering Students , James D. Leary, Univ of Florida, Gainesville, FL (J.D. Leary)
10:45AM	068005	Teaching General Education in Agricultural and Biological Engineering , Michael C. Hirschi, P.E., Univ of Illinois, Urbana, IL (M. Hirschi, P. Buriak, R. Westgren)
11:00AM	068006	Teaching to Learning: Shifting the Model , Philip Buriak, Univ of Illinois, Urbana, IL (P. Buriak, J.G. Harper, K. Bhalerao, L. Rodrigues)
11:15AM	068007	Prototyping of Learning Objects for Engineering Education , Elsa Susana Sepulveda, Univ of Florida, Gainesville, FL (E.S. Sepulveda Bustos, F.S. Zazueta, W. B. Cooke, R. Bucklin)

Monday, July 10 – 9:30AM-12:00PM

123-ED-O-6A SOIL AND WATER PROTECTION IN FOREST

OPERATIONS-PART I (Sponsored by T-12)

Moderator: Johnny M. Grace, III, U.S. Forest Service, Southern Research Station, Auburn, AL
Location: C120

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	068008	Soil and Water Protection in Appalachian Watersheds , James M. Vose, USDA Forest Service Southern Research Station, Otto, NC (J.M. Vose, B.D. Clinton)
10:05AM	068009	Protection from Erosion Following Wildfire , Pete R. Robichaud, USDAFS, Moscow, ID (P.R. Robichaud, W.J. Elliot)
10:35AM		Break
10:45AM	068010	Forest Road Management to Protect Soil and Water , Johnny M. Grace, III, U.S. Forest Service, Southern Research Station, Auburn, AL (J. M. Grace III)
11:00AM	068011	Using WEPP Technology to Predict Erosion and Runoff , William John Elliot, USDA FS, Moscow, ID (W.J. Elliot, I.S. Miller, B.D. Glaza)
11:15AM	068012	Erosion From All Terrain Vehicle (ATV) Trails on National Forest Lands , Randy B. Foltz, USDA Forest Service, Moscow, ID (R.B. Foltz, K.Y. Tyler)

Monday, July 10 – 9:30AM-12:00PM

124-ED-O-3 APPROACHES FOR INTRODUCING ETHICS EDUCATION INTO UNDERGRADUATE AND GRADUATE CURRICULA

(Sponsored by ED-412)

Moderator: Ernest W. Tollner, Univ of Georgia, Athens, GA
Location: C121

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	068013	Teaching Research Ethics at Land Grant Universities , Gary Comstock, North Carolina State University, Raleigh, NC
10:05AM	068014	A Three Tier Approach to Ethics in an Engineering Curriculum , Robert J. Gustafson, PhD, Ohio State Univ, Columbus, OH (R.J. Gustafson)
10:25AM	068015	Engineering Ethics Course at North Dakota State University , Thomas A. Bon, PE, North Dakota State Univ, Fargo, ND (T. Bon)
10:45AM		Break
10:55AM	068016	Results of an Alumni Survey on Professional and Ethical Responsibility , Robert J. Gustafson, PhD, Ohio State Univ, Columbus, OH (R.J. Gustafson, E.D. McCaul)
11:15AM	068017	Stephen Sharp, A Case Study for Teaching Ethics in Ag and Bio Engineering , James D. Leary, Univ of Florida, Gainesville, FL (A.E. Turner, J.D. Leary)
11:35AM	068018	Using Case Studies to Introduce Situations Requiring Ethical Decisions , Natalie J. Carroll, Purdue Univ, West Lafayette, IN (N. Carroll)

POWER & MACHINERY

Monday, July 10 – 2:30PM-5:00PM

125-PM-5 INFLUENCE OF HARVEST VARIABLES ON FORAGE QUALITY (Sponsored by PM-23/7/2)

Moderator: Maynard M. Herron, AGCO Corp, Hesston, KS
Location: A104

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	061047	Effect of Harvest Method and Lab Procedures on Corn Silage Digestibility , Dennis R. Buckmaster, Penn State Univ, University Park, PA
2:55PM	061048	Effect of Density, Cover, Depth, and Time on Dry Matter Loss of Corn Silage , Philippe Savoie, Agriculture & Agri-Food Canada, Ste Foy, QC Canada
3:15PM	061049	Wide-Swath Drying and Post Cutting Processes to Hasten Alfalfa , Kevin J. Shinnars, Univ of Wisconsin, Madison, WI
3:35PM		Break
3:45PM	061050	Effect of Hay Properties on Variation on the Mechanical Compression of Timothy , Anthony Opoku, Univ of Saskatchewan, Saskatoon, SK Canada – Presenter Mark Shaw
4:05PM	061051	Intensive Conditioning of Alfalfa: Drying Rate and Leaf Loss , Kevin J. Shinnars, Univ of Wisconsin, Madison, WI
4:25PM		Discussion

Monday, July 10 – 2:30PM-5:00PM

126-PM-14 SOIL SENSORS FOR PRECISION AGRICULTURE

(Sponsored by PM-45, PM-54, IET-353)

Moderator: Carol Plouffe, Deere & Co, Moline, IL
Location: A108

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	061052	Using Soil Electrical Conductivity to Map Nematode-Prone Areas in Agricultural Fields , Calvin D. Perry, Univ of Georgia, Tifton, GA (C. Perry, G. Vellidis, K. Rucker, & D. Sullivan)
2:50PM	061053	Using Soil Electrical Conductivity to Map Soil Texture in Southeastern Soils , George Vellidis, University of Georgia, Tifton, GA (G. Vellidis, C. Perry, R. Hill, D. Dales, W. Page)
3:20PM	061055	Increasing Information with Multiple Soil Electrical Conductivity Datasets , Kenneth A. Sudduth, USDAARS, Columbia, MO (K.A. Sudduth, N.R. Kitchen)
3:35PM		Break
3:35PM	061056	Development of an Electro-Mechanical System to Identify and Map Adverse Soil Compaction Using GIS & GPS , Santosh K. Pitla, Lexington, KY (S.K. Pitla, L.G. Wells)
4:00PM	061057	Comparison of Two Alternative Methods to Map Soil Mechanical Resistance On-the-Gom , Viacheslav I. Adamchuk, Univ of Nebraska, Lincoln, NE (V.I. Adamchuk, K.A. Sudduth, T.J. Ingram, S.O. Chung)
4:15PM	061058	Development of a Universal Calibration Model Based on Mid-IR Spectroscopy for Determining Soil Nitrate Content , Bernie R. Jahn, Univ of California Davis, Davis, CA – Shrinu Upadhyaya (B.R. Jahn, S.K. Upadhyaya)
4:30PM	061059	Direct Determination of Soil Moisture and Nitrate Content Using FTIR/ATR Spectroscopy , Raphael Linker, Technion - Israel Institute of Technology, Haifa, Israel (A. Borenstein, R. Linker, I. Shmulevich, A. Shaviv)
4:45PM	061060	A Microcontroller-Based Frequency-Domain Sensor for Simultaneous Measurement of Multiple Soil Properties , Kyeong Hwan Lee, Univ of Florida, Winter Haven, FL (K.H. Lee, N. Zhang, G. Kluitenberg)

Monday, July 10 – 2:30PM-5:00PM

127-PM-18 SPECTRAL SENSING FOR PRECISION AGRICULTURE

(Sponsored by PM-54, IET-348)

Moderator: Carol L. Jones, Oklahoma State Univ, Stillwater, OK
Location: A107

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	061061	Design of a Hyperspectral Nitrogen Sensing System for Citrus , Min Min, Univ of Florida, Gainesville, FL (M. Min, W.S. Lee)
2:50PM	061062	Analysis of the Influence of Soil Roughness, Surface Crust and Soil Moisture on Spectral Reflectance , Geetika Dilawari, Iowa State Univ, Ames, IA (G. Dilawari, A. Kaleita)
3:05PM	061063	Fluorescence Spectroscopy of Vegetation for Weed-Crop Discrimination , Bernard Panneton, Agriculture & Agri-Food Canada, St Jean-sur-Richelieu, QC Canada (B. Panneton, L. Longchamp, R. Thériault, G. Leroux, C. Lemieux.)
3:20PM	061064	Spectral Response of Cotton Canopy to Water Stress , Sreekala G. Bajwa, Univ of Arkansas, Fayetteville, AR (S. G. Bajwa, E. D. Vories)
3:35PM		Break
3:45PM	061065	Spectral Sensing of Different Citrus Varieties for Precision Agriculture , Kevin E. Kane, Univ of Florida, Gainesville, FL (K.E. Kane, W.S. Lee)
4:00PM	061066	The Nutrition Determination of the Soybean Crop Canopy Based on Spectral Reflection , Liusuo Liang, Jilin University, Changchun Jilin, China (L. Liang, X. Ma, X. Qiao)
4:15PM	061067	Classification of Soils into Different Moisture Content Levels Based on VIS-NIR Spectra , Abdullmoumen Mouazeh, Catholic University of Leuven, Belgium (A. M. Mouazen; R. Karoui; J. De Baerdemaeker; H. Ramon)

ASABE's Awards Luncheon
Wednesday, July 12 from 12:00PM-2:30PM
Oregon Ballroom of the Oregon Convention Center

Monday, July 10 – 2:30PM-5:00PM

128-PM-21 VARIABLE-RATE TECHNOLOGY FOR PRECISION AGRICULTURE

(Sponsored by PM-54, PM-23/6)

Moderator: Randy R. Price, Louisiana State Univ, Baton Rouge, LA
Location: A105

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	061068	Development of a Control System for Variable-Rate Application of Granular Fertilizer in Paddy Farming , JiHun Yu, Seoul National University Dept. of Biosystems & Biomaterials Eng., Kwanak-gu, South Korea (J.H. Yu; Y.J. Kim; K. H. Ryu; J.Y. Rhee)
2:50PM	061069	Development of an Application Rate and Uniformity Controlled Granular Fertilizer Spreader , Giyoung Kweon, Univ of Illinois, Urbana, IL (G. Kweon, T. Grift)
3:05PM	061070	Development of the Variable Rate Granule Applicator and Analysis of Uniformity , Seunghwan Yang, Seoul National University, Seoul, South Korea (Y. Kim)
3:20PM	061071	Dynamic Characteristics Evaluation of Two Commercial Hydraulic Flow-Control Valves for the Variable-Rate Granular Fertilizer Spreader , Sharath A. Cugati, Univ of Florida, Gainesville, FL (S.A. Cugati, W.M. Miller, J. K. Schueller, A.W. Schumann)
3:35PM		Break
3:45PM	061072	Moisture Absorption Characteristic of Granule Fertilizer , Sang-Hun Lee, Purdue Univ, West Lafayette, IN – Presenter YoungJoo Kim (Y.J. Kim, J.Y. Rhee)
4:00PM	061073	Optimizing Variable Rate Granular Fertilizer Spreader Performance for Single-Tree Prescription Zones , Arnold W. Schumann, Univ of Florida, Lake Alfred, FL (A.W. Schumann, W. Miller, K.H. Hostler, S. Buchanon, S. Cugati)
4:15PM	061074	Field Test Results from a Prototype Planter with Embedded Controls for Individual Rows , Scott A. Shearer, Univ of Kentucky, Lexington, KY (B.M. McDonald, S.A. Shearer, M.W. Veal)
4:30PM	061075	Status of Variable Rate Irrigation in the Southeast , Calvin D. Perry, Univ of Georgia, Tifton, GA – Presenter: Andrea Milton (C. Perry, A. Milton)

SOIL & WATER

Monday, July 10 – 2:30PM-5:00PM

129-SW-02 WATERSHED MODELING FOR WATER RESOURCE ASSESSMENT AND BME EVALUATION (IN MEMORY OF DR. JOHN PARSONS - DEC. 11, 1951 - OCT. 3, 2005)

(Sponsored by SW-21)

Moderator: Rafael Munoz-Carpena, University of Florida, Gainesville, FL
Location: B113

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM		Tribute to Dr. John Parsons , Richard Wayne Skaggs, North Carolina State Univ, Raleigh, NC
2:50PM	062109	John E. Parsons: a Tale of Research and Friendship , Rafael Munoz-Carpena, Univ of Florida, Gainesville, FL
3:05PM	062110	Representation of Agricultural BMPs with SWAT , Jane Frankenberger, Purdue Univ, West Lafayette, IN (J. Frankenberger, C. Baffaut, M. Arabi, B. Engel)
3:20PM	062111	Critical Issues in Representation of BMPs with Watershed Models , Mazdak Arabi, Purdue Univ, West Lafayette, IN (M. Arabi, B. Engel, J. Frankenberger)
3:35PM	062112	Long-Term Water Quality Responses to Conservation Practices in Nested Coastal Plain Watersheds , George Vellidis, University of Georgia, Tifton, GA (G. Vellidis, R. Lowrance, S. Crow, G. Feyereisen, D. Bosch, J. Sheridan, G. Hawkins)
3:50PM		Break
4:00PM	062113	Modeling an Illinois Watershed for Water Quantity and Quality Assessments at the Surface Water Supply Intakes , Deva K. Borah, Illinois State Water Survey, Champaign, IL (D.K. Borah, E.C. Krug, M. Bera, X.-Z. Liang)
4:15PM	062114	Evaluating BMPs in a Claypan Watershed , Amanda R. Koelling, University of Missouri, Columbia, MO (A. R. Koelling, A. L. Thompson, C. Baffaut, E.J. Sadler)
4:30PM	062115	Quantifying Nutrient Load Reductions from BMPs Common to the Choptank River Watershed Using AnnAGNPS and REMM: a CEAP Special Emphasis Watershed Project , Carrie Graff, USDAARS ANRI EQL, Beltsville, MD (A.M. Sadeghi, G.W. McCarty, R.R. Lowrance)
4:45PM	062116	Non-Point Source Pollution Assessment of Cedar Creek Watershed using a Three-Tiered Modeling Approach , Balaji Narasimhan, Texas A&M Univ, College Station, TX (B. Narasimhan, R. Srinivasan, S. Bernardz, M. Ernst)

Monday, July 10 – 2:30PM-5:00PM

130-SW-03 USE OF MODELING IN IRRIGATION MANAGEMENT

(Sponsored by SW-24)

Moderator: Allen L. Gehring, PE, USDANRCS, Grand Island, NE
Location: B112

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	062117	Using SPAW to Design Tailwater Pits and Reservoirs in Eastern Arkansas , Peter M. Robinson, USDANRCS, Portland, OR (P.M. Robinson, D. Carman et al)
3:05PM	062119	Efficacy of Artificial Irrigation for Central Iowa Using Ceres-Maize Crop Model , Kendall C. DeJonge, Iowa State Univ, Ames, IA (K. DeJonge, A. Kaleita)
3:20PM	062120	Computer Programs Used for Improved Water Management in Arkansas , Phil Tacker, Cooperative Ext Service, Little Rock, AR (P.L. Tacker)
3:35PM	062121	Temperature Corrected Scaled Frequency to Improve the Accuracy of Multisensor Capacitance Probes , Ali Fares, University of Hawaii, Honolulu, HI – Presenter: Dan Jenkins (A. Fares, S. Hamdani, V. Polyakov, D.M. Jenkins)
3:50PM		Break
4:00PM	062122	A Transport Model to Evaluate Fertigation Strategies in Surface Irrigation , Hugo Perea, Univ of Arizona, Nezhualcoyotl, Mexico (H. Perea, F. J. Adamsen, D. J. Hunsaker, F. S. Strelkoff)
4:15PM	062123	Off-Stream Storage Efficiency for Cotton Production in Northern Alabama , Mark Dougherty, Auburn Univ, Auburn, AL (Dougherty, Fulton, Curtis, Harkin, Norris)
4:30PM	062124	Neural Approach of Sub-Pixel Rice Quantification for Optimized Irrigation Scheduling , Manoj Karkee, Iowa State University, Ames, IA (M. Karkee, B. Steward and L. Tang)

4:45PM 062125 **Development of a Soil Moisture Model Using a Dynamic Simulator**, Taegon Kim, Seoul National University, Kwanak, South Korea (T. Kim, J. Lee, H. Yi, K. Suh, M. Park)

INFORMATION & ELECTRICAL TECHNOLOGIES

Monday, July 10 – 2:30PM-5:00PM

131-IET-2 MODELING OF CROP AND FARM SYSTEMS

(Sponsored by IET-210, BE-26)

Moderator: Ayse Irmak, Univ of Nebraska, Lincoln, NE
Location: C126

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	063020	SPUDSIM: A Model for Simulating Potato Productivity , David H. Fleisher, USDAARS PSI CSGCL, Beltsville, MD (D.H. Fleisher, D. Timlin)
2:50PM	063021	Adapting the CSM-CERES Maize Model for Ability to Simulate Growth and Yield of Sweet Corn , Axel Garcia Y Garcia, Univ of Georgia, Griffin, GA (A. Garcia y Garcia, J. Lizaso, L.C. Guerra, J. Paz, G. Hoogenboom, K.J. Boote)
3:05PM	063022	Physiological Response of Sugarcane (saccharum spontaneum, cv us 67-22-2) to N Fertilization , Salvio J. Torres, Univ of Puerto Rico Agronomy & Soils Dept, San German, PR (L.R. Perez-Alegria, W. de la Torre)
3:20PM	063023	An Alternative Approach in Developing Agricultural System Models , Ho-Jae Yi, Pennsylvania State University, University Park, PA (H. Yi, J.-J. Lee)
3:35PM	063024	Use of Crop Growth Models to Develop Deficit Irrigation Management Strategies in Nebraska , Ayse Irmak, Univ of Nebraska, Lincoln, NE (A. Irmak, D.L. Martin, S. Irmak, J. Payero, S. Melvin, G. Hergert, D. Yonts)
3:50PM		Break
4:00PM	063025	Estimating On-Farm Irrigation Water Use in Georgia with a Crop Simulation Model , Larry C. Guerra, Univ of Georgia, Griffin, GA (L.C. Guerra, A. Garcia y Garcia, G. Hoogenboom, J. O. Paz, J. E. Hook, K. A. Harrison)
4:15PM	063026	Pecan Irrigation-Fertilization-Pruning Scheduling Model , Junming Wang, New Mexico State Univ, Las Cruces, NM (J. Wang, A.A. Andales, T.W. Sammis, J.G. Mexal, L.J. Simmons, D.R. Miller)
4:30PM	063027	Uncertainty Analysis of the CERES Model under Sweet Corn Production in North Florida , Jianqiang He He, University of Florida, Gainesville, FL (J. He, M. Dukens)
4:45PM	063028	Analysis of Improvements in Asparagus Mechanical Harvesters Using a Crop Growth Model , Tiziano Cembali, Washington State Univ, Pullman, WA – Presenter: Carter D. Clary (T. Cembali, M. Mari, R. J. Folwell)

Monday, July 10 – 2:30PM-5:00PM

132-IET-15 MACHINE VISION FOR AUTONOMOUS VEHICLES

(Sponsored by IET-312, PM-58)

Moderator: Lie Tang, Iowa State Univ, Ames, IA
Location: C125

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	063029	Determination of Crop Rows Using Image Analysis , Chuan Shen, Zhejiang University, Hangzhou, Peoples Republic of China (C. Shen, H. Jiang, Y. Ying, F. Zhang)
2:50PM	063030	HortiBot: A New Commercial Machine Vision System for Guidance within Row Crops - Part IV , Rasmus N. Jørgensen, Danish Institute of Agricultural Sciences, Horsens, Denmark (R.N. Jørgensen, C.G. Sørensen, K. Jensen, T.E. Madsen)
3:05PM	063031	Sensor Fusion of Machine Vision and Laser Radar for Autonomous Vehicle Navigation in Citrus Groves , Vijay Subramanian, Univ of Florida, Gainesville, FL (V. Subramanian, T.F. Burks)
3:20PM		Break
3:30PM	063032	Tomato Recognition and Location Based on Binocular Stereo Vision , Chuan Shen, Zhejiang University, Hangzhou, Peoples Republic of China (H. Jiang, C. Shen, X. Rao, Y. Ying, F. Zhang)
3:45PM	063033	Use of Machine Vision for Near Real Time Guidance of a Bird Reducing "Scarebot" , Randy R. Price, Louisiana State Univ, Baton Rouge, LA (R. Price, S. Hall, U. Nadimpalli)
4:00PM	063034	Kalman Filter for Sensor Fusion of GPS and Machine Vision , Francisco Rovera-Mas, Univ of Illinois, Urbana, IL (F. Rovira-Más, S. Han, L. Tang, A. Mizushima)

Monday, July 10 – 2:30PM-5:00PM

133-IET-20B HYPERSPECTRAL AND MULTISPECTRAL IMAGING -

PART 2 (Sponsored by IET-348, IET-312)

Moderator: Bosoon Park, USDAARS, Athens, GA
Location: C124

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	063035	Bacterial Fruit Blotch Detection with Multi-Spectral Imaging , Chi Ngoc Thai, Univ of Georgia, Athens, GA (C. Thai, K. Stevenson, R. Gitaitis, R. Walcott)
2:50PM	063036	Predicting Beef Tenderness Using Hyperspectral Imaging , Govindarajan Konda Naganathan, Univ of Nebraska, Lincoln, NE (G. Naganathan, J. Subbiah, C. Calkins, A. Samal)
3:05PM	063037	Measurement of Optical Properties of Solid Simulation Samples and Apples Using Hyperspectral Diffuse Reflectance , Jianwei Qin, Michigan State Univ, East Lansing, MI (J. Qin, R. Lu)
3:20PM	063038	Unsupervised Spectral Classification of Remote Sensing Imagery Using Data Mining and Statistical Techniques , Rajesh K. Singh, Purdue Univ, West Lafayette, IN (R. Singh, B. Engel)
3:35PM		Break
3:45PM	063039	Visible/near-infrared Hyperspectral Reflectance and Transmittance Imaging for Detection of Internal Mechanical Injury in Pickling Cucumbers , Diwan P. Ariana, Michigan State Univ, East Lansing, MI (D. Ariana, R. Lu)
4:00PM	063040	Detecting Blood Spots, Meat Spots, and Other Defects in Shell Eggs with Hyperspectral Imaging , Kurt C. Lawrence, USDAARS, Athens, GA (K. Lawrence, D. Smith, B. Park, J. Heitschmidt, R. Windham)
4:15PM	063041	Pork Quality Assessment Using Hyperspectral Imaging System: Optimizing Selection of ROI , Jun Qiao, McGill Univ, Ste-Anne-de-Bellevue, QC Canada (J. Qiao, N. Wang, M. Ngadi, A. Gunenc)

STRUCTURES & ENVIRONMENT

Monday, July 10 – 2:30PM-5:00PM

134-SE-6 STRUCTURES & ENVIRONMENT DIVISION POSTER SESSION (Sponsored by SE)

Agricultural Waste Management & Land Application of Waste to Meet Regulatory and Environmental Concerns - Mini Symposium
Ventilation and Indoor Air Quality in Animal Buildings (SE-302)

Moderator: Bryan Woodbury, USDAARS, Clay Center, NE

Location: Exhibit Hall A

POSTER #	PAPER #	PRESENTATION TITLE
1	064038	Developing Landowner Confidence in the Practice of Animal Mortality Composting , Sally S. Bredeweg, USDANRCS, Spokane, WA (S. Bredeweg, P. Majer)
2	064039	Recovery of Malodorous Livestock Odors and Gases From Tedlar Sampling Bags Using Olfactometry and Thermal Desorption Tubes , Zena Perschbacher-Buser, West Texas A&M University, Canyon, TX (Z. Perschbacher-Buser; D. Parker; M. Rhoades;)
3	064040	Assessment of Animal Waste Application Management on NPS Load from Watershed using SWAT Model , Kwang S. Yoon, Chonnam National Univ, Kwangju, South Korea (K.S. Yoon, A. Shirmohammadi, H. Montas, A.M. Sexton, T.W.Chu)
4	064041	A Regenerating Scrubber for Reducing Animal House Emissions , Sanjay B. Shah, North Carolina State Univ, Raleigh, NC (S.B. Shah, P.W. Westerman, R. Munilla, G.R. Baughman)
5	064042	Enhanced Nitrification of Ammoniacal-N in Dairy Manure using Immobilized-cell Technology , Pius M. Ndegwa, Washington State Univ, Pullman, WA (P. Ndegwa)
6	064043	Assessment of Physical and Chemical Characteristics of Bottom, Cyclone, and Baghouse Ash from the Combustion of Manure , Anthony J. Megel, West Texas A&M Univ, Canyon, TX (A. Megel, D. Parker, J. Sweeten, R. Mitra)
7	064044	Odor Control via Reduction of P-Cresol in Waste Management Lagoons Using Horseradish Peroxidase - Laboratory Studies
8	064045	Odor Control via Reduction of Indole in Waste Management Lagoons , Edward A. Caraway, West Texas A&M University, Canyon, TX (E. Caraway, M. Olsen, N.Ghosh, B. Eniola, D. Mahapatra, Z. Perschbacher-Buser, D. Parker)
9	064046	pH Adjustment of Swine Manure for Struvite Precipitation , Timothy A. Shepherd, Iowa State Univ, Ames, IA (T. Shepherd; L. Moody; R. Raman; R. Burns)
10	064047	Evaluation of Cost Effective Methods for Measuring Runoff Volume from Vegetative Treatment Areas , Ishadeep K. Khanijo, Iowa State Univ, Ames, IA (Ishadeep Khanijo, Robert Burns, Lara Moody, and Carl Pederson)
11	064048	Water Quality Impacts of Deep Row Biosolids Incorporation on a Tree Farm , Carrie Buswell, Univ of Maryland Biological Resources Eng, College Park, MD (C. Buswell, G.K. Felton, J. Kays, E. Flamino)
12	064049	Engineering Evaluation of a Composting System for Bio-Containment and Safe Emergency Disposal of Infectious Animal Carcasses , Thomas Dean Glanville, Iowa State Univ, Ames, IA (T.D. Glanville, H.K. Ahn, J.A. Koziel, D.L. Reynolds)
14	064051	Composting and Land Application of Anaerobic Digestion Residual Solids , Joshua L. Rapport, Univ of California, Davis, CA (J.L. Rapport, R. Zhang)
15	064052	Aeration Requirement for Odor Control of Liquid Swine Manure Determined by the Manure Solids Content , Jun Zhu, Univ of Minnesota, Waseca, MN (Z. Zhang, C. Miller)
16	064053	A Model to Estimate Ammonia Loss Following Application of Animal Manure , John P. Chastain, Clemson Univ, Clemson, SC (J.P. Chastain)
17	064054	Composition of Animal Manure Compost and Utilization Implications , John P. Chastain, Clemson Univ, Clemson, SC (J.P. Chastain, C.C. Frase, K.P. Moore)
18	064055	System Design for CNMP and NPDES Permit Application for the U.S. Meat Animal Research Center , John A. Nienaber, USDAARS, Clay Center, NE (R. Eigenberg, B. Woodbury)
19	064056	Application of Soil Salinity Monitoring Methods to Manure Management Sites , Roger A. Eigenberg, USDAARS, Clay Center, NE (B.L. Woodbury, S.M. Lesch, J.A. Nienaber)
21	064058	Vegetative Treatment Area Geospatial Nutrient Distribution after Eight Years of Operation , Bryan L. Woodbury, USDAARS, Clay Center, NE (R. Eigenberg, J. Nienaber)
22	064059	Surficial Oxygen Transfer Rates into Treatment Lagoons Based on Characteristic Wind Speed Distributions , Kyoung S. Ro, USDAARS, Florence, SC (P.G. Hunt)
23	064060	3-D Numerical Simulation of Biogas Production for Low-Solid Swine Anaerobic Digesters , Binxin Wu, Univ of Manitoba, Winnipeg, MB (B. Wu, E. Bibeau)
24	064061	Aerobic Composting of Swine Manure Solids Mixed with Cotton Gin Waste , Matias B. Vanotti, USDAARS, Florence, SC (M. Vanotti, P. Millner, A. Szogi, R. Campbell, L. Fetterman)
25	064062	ASBR Modeling and Startup , Spencer L. Mann, Oklahoma State University, Stillwater, OK (S. Mann, D. Hamilton)
26	064063	Comparison of Carcass Compost Recipes Used to , Kevin R. Heflin, Texas Agr Exp Station, Amarillo, TX (K. Heflin, B.W. Auvermann, G.W. Marek)
27	064064	Corrosion of Mortar Covering used in Tanks of Storage to Swine and Bovine Wastes , Ilda Ferreira Tinoco, Federal Univ of Vicosa Depto De Eng Agricola, Vicosa, Brazil (M.O. De Paula, C. de F. Souza, I. de F.F. Tinoco, E.N. Silva)
28	064065	Determination of Thermal Properties of Compost Bulking Materials by Using Various Methods , Hee Kwon Ahn, Iowa State Univ, Ames, IA (H.K. Ahn, T.J. Sauer, T.L. Richard, T.D. Glanville)
29	064066	Development of an Evaporative-Runoff Model for Cattle Feedlot Pens , Charles P. Maule, Univ of Saskatchewan, Saskatoon, SK Canada (C.P. Maule, D. Chi)
30	064067	Engineering Technologies to Manage Pathogen Reduction in Biosolids , Susan A. O'Shaughnessy, Univ of Arizona, Tucson, AZ - Presenter Chris Choi (S. O'Shaughnessy, C. Choi, M. Grabau, T. Dominguez)
31	064068	Evaluation of the Methane Concentration in Biogas Produced from Dejections of Milk Goats Submitted to Different Diets , Cristina A. Mogami, Universidad Federal de Vicosa, Vicosa, Brazil (C.A. Mogami, C. de F. Souza, I. de F. F. Tinoco, F. da Costa Baeta, V.T. Paim)
33	064070	Ammonia Speciation in Anaerobic Digesters , Sasha D. Hafner, Cornell Univ, Ithaca, NY (S.D. Hafner, W. J. Jewell, J.J. Bisogni, Jr.)
34	064071	Measuring Ammonia Emissions from Hog Anaerobic Lagoon Effluent Applied with Traveling Gun and Drag Hose Systems , Sanjay B. Shah, North Carolina State Univ, Raleigh, NC (S.B. Shah, P.W. Westerman, G.L. Grabow, T. Bennett)
35	064072	Rheology and Flowability Properties of Liquid Dairy and Swine Waste , Harold M. Keener, Ohio State Univ, Wooster, OH (H.M. Keener, J.J. Hoorman, M. Klingman)

36	064073	Study of Efficiency of Vegetative Filter Strips in Removal of Bacteria , Colin Clarke, University of Guelph, Ontario, Canada (C. Clarke, A. Moharir, R. Rudra, B. Gharbaghi)
37	064074	Use of Dissolved Air Flotation for Separating Poultry Processing Effluent , Michael E. Quintana, LSU Agricultural Center, Baton Rouge, LA (M. Quintana, C. Theegala)
38	064075	Vegetated Treatment Areas to Utilize Feedlot Runoff , Harold Blume, USDANRCS, Salina, KS (H.R. Blume)
39	064076	A Continuous Process to Remove Phosphorus from the Swine Wastewater Forming Struvite , Inhwon Oh, Konkuk Univ, Chungju, Chungbuk, South Korea (I.H. Oh, J.H. Lee)
40	064077	Dust Spatial Distribution and Emission in Three Different Kinds of Chicken House in Beijing , Yushu He, China Agricultural University, Beijing, Peoples Republic of China (Y. He, B. Li, J. Cheng, A. Geng)
41	064078	Development of a Software for the Design of Ventilation and Evaporative Cooling Systems in Climatized Avian Facilities , Ricardo Brauer Vigoderis, Universidade Federal de Vicosa, Vicosa, Minas Gerais, Brazil (D.G. de Pauli, R.B. Vigoderis, V.O. de Iorio, J.N. da Silva, I. de Fátima Ferreira Tinoco, R.S. Gates)
42	064079	Diagnosis of the Air Quality (NH3 and CO) in the Production of Broiler Chickens in Avian Facilities Half-Climatized by Negative and Positive Pressure, in the Winter, at the South of Brazil , Irene Menegali, Universidade Federal de Vicosa, Vicosa, MG, Brazil (I. Menegali, I. de Fátima Ferreira Tinoco, F. da Costa Baeta, H. Xin, J.C. de Abreu Severo)
43	064080	Microclimate and Gas Emissions in Cold Uninsulated Dairy Buildings , Frederucj Teye, University of Helsinki Department of Agrotechnology, Helsinki, Finland (F. Teye, H. Gröhn, M. Hautala, J. Ahokas, V. Poikalainen)
44	064081	Energy Analysis of a New Swine Building Using Geothermal System , Xinlei Wang, Univ of Illinois, Urbana, IL (X. Wang, J. Jjiang, T. Funk)
45	064082	Implement Of Animal Building Temperature Fuzzy Control System , Dongping Qian, Agricultural University of Hebei, Baoding, Hebei, Peoples Republic of China (D. Qian)
46	064083	Monitoring of Ventilation Rates of Swine Finishing Barns using Direct and Indirect Methods , Lingying Zhao, Ohio State Univ, Columbus, OH (L.Y. Zhao, M. Darr, X. Wang, R. Manuzon, J. Funk)
47	064084	Spatial Distribution of Ammonia Concentration in a Swine Finishing Building in Illinois , Sheryll B. Jerez, Univ of Illinois, Urbana, IL (S.B. Jerez, Y. Zhang, X. Wang)
48	064085	Spatial Distribution of Dust Concentration and Particle Size Distribution in a Swine Finishing Building in Illinois , Sheryll B. Jerez, Univ of Illinois, Urbana, IL (S.B. Jerez, Y. Zhang, X. Wang)
49	064086	Numerical Simulation of Airflow and Contaminant Spatial Distribution in a Swine Finishing Building , Jianbo Jiang, University of Illinois, Urbana, IL (J. Jiang, X. Wang, S. Jerez, Y. Zhang)
50	064087	Ventilation and Cooling Systems in Intensive Rabbit Houses of Northern Italy , Francesco da Borso, Università di Udine, Udine, Italy (F. Da Borso, A. Chiumentti, R. Shiumentti, A. Landà) Bolanle Eniola, West Texas A&M University, Canyon, TX (Bolanle Eniola, Mark Olsen, Nabarun Ghosh, Edward Caraway, Zena Perschbacher-Buser, David Parker)
51	064204	Determination of Ammonia and Odor Released from Animal Building Dusts , Jongmin Lee, University of Illinois, Urbana, IL (J. Lee, Y. Zhang)

ERGONOMICS, SAFETY & HEALTH

Monday, July 10 – 2:30PM-5:00PM

135-ESH-2 UNIVERSITY CURRICULA FOR AGRICULTURAL SAFETY AND HEALTH (Sponsored by ESH-04, P-206, P-205, P-203)

Moderator: Charles Ogborn, Packer Engineering Inc, Naperville, IL

Location: A109

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	065008	Online Safety and Ergonomics Course for Nontraditional Students in the M.S. Agricultural Operations Management Program , Timothy George Prather, Univ of Tennessee, Knoxville, TN (T.G. Prather, T.N. Burcham)
2:50PM	065009	Promoting Safety through Economics Education , Melvin L. Myers, Avondale Estate, GA (M. L. Myers)
3:05PM	065010	Teaching Management of Safety and Health Issues in Agriculture and Rural Business , Dennis J. Murphy, Penn State Univ, University Park, PA (D.J. Murphy, J.W. Hilton)

FOOD & PROCESS ENGINEERING INSTITUTE

Monday, July 10 – 2:30PM-5:00PM

136-FPE-5 DRYING, STORAGE AND HANDLING OF GRAINS AND OTHER CROPS (Sponsored by FPE-702)

Moderator: Michael D. Montross, Univ of Kentucky, Lexington, KY

Location: B117

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	066037	Modeling the Physical and Genetic Purity of the Food Corn Supply Chain from Producers to a Mass Flour Mill , Nathan A. Fleck, Purdue Univ, Okemos, MI (N. Fleck, D.E. Maier, D.R. Ess)
2:50PM	066038	Effect of Airflow Distribution on the Performance of NA/LT in-Bin Drying of Corn , Ricardo E. Bartosik, Purdue Univ, Balcarce, Argentina (R. Bartosik, D. Maier)
3:05PM	066039	Monitoring Carbon Dioxide Levels for Early Detection of Spoilage in Corn Stored in Large Tanks and Ground Piles , Rajshekhar B. Hulasare, Purdue Univ, West Lafayette, IN (R.j Hulasare, D.E. Maier, P. Armstrong)
3:20PM	066040	Mycotoxin Control During Grain Processing , Michael E. Tumbleson, Univ of Illinois, Urbana, IL (V. Singh, K.D. Rausch, D.B. Johnston, D.F. Kendra, G.L. Meerdink, W.M. Haschek)
3:35PM	066041	Parallel-plate Sensors for Measurement of Moisture Content in In-Shell Peanuts Nondestructively , Venkatkrishna Chari Kandala, USDAARS, Dawson, GA (C.V. K. Kandala, C. L. Butts, S.O. Nelson)
3:50PM		BREAK
4:00PM	066042	Optimization of a Continuous-Flow Drying System , Andrew J. Heber, Purdue Univ, Lafayette, IN (D. Maier, A. Heber)
4:15PM	066043	Large Portable Auger Throughput Analysis , Adam Dittbenner, South Dakota State Univ, Brookings, SD (R.E. Nicolai, A. Dittbenner, S. Pasikanti)

- 4:30PM 066044 **Durability and Breakage of Feed Pellets During Repeated Elevator Handling**, Josephine M. Boac, Kansas State Univ, Manhattan, KS (J. M. Boac, M.E. Casada, R.G. Maghirang)
- 4:45PM 066045 **Commercial Harvesting and Drying of Milkweed Pods**, Richard J. Tillotson, Western Illinois Univ, Macomb, IL (B. Tillotson)

Monday, July 10 – 2:30PM-5:00PM

137-FPE-12 MICROWAVE AND RADIO FREQUENCY HEATING IN AGRICULTURAL AND FOOD PROCESSING

(Sponsored by FPE-703)

Moderator: Carter D. Clary, Washington State Univ, Pullman, WA
Location: B118

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:30PM		Microwave and Radio Frequency Heating in Agricultural and Food Processing , Shaojin Wang, Washington State Univ, Pullman, WA
2:35PM	066046	Industrial-scale Radio Frequency Treatments for Insect Control in in-Shell Walnuts , Shaojin Wang, Washington State Univ, Pullman, WA (S. Wang, M. Monzon, J.A. Johnson, E.J. Mitcham, J. Tang)
2:50PM	066047	Radio Frequency Drying of High Moisture Cotton , Gary R. Gamble, US Dept of Agriculture, Clemson, SC (G.R. Gamble)
3:05PM	066048	Dehydration of In-Shell Peanuts using Radio Frequency Energy with Intermittent Stirrings , Hatem Harraz, Auburn Univ, Auburn University, AL (H. Harraz, Y. Wang, C. Butts)
3:20PM	066049	Vacuum Radiant Energy Drying Kinetics of Alginate Gel , Timothy D. Durance, University of British Columbia, Vancouver, BC Canada (S. Jaya, T.D. Durance)
3:35PM	066050	Quarantine Treatment on Mango using Microwave-Vapor Combined Process , Jatuphong Varith, Maejo University, Chiang Mai, Thailand (J. Varith, W. Sirikajornjaru, T. Kiatsiriroat)
3:50PM		Break
4:00PM		
4:15PM	066052	Radio Frequency Heating Patterns (in Fruit) as Influenced by Dielectric Properties of Constituent Parts of Fruit , Sohan Lal Birla, Indore, India (S.L. Birla, S. Wang, J. Tang)
4:30PM	066053	Heating Uniformity Study on Packaged Foods Processed with Radio Frequency Energy , Zhongwei Tang, Washington State Univ, Pullman, WA (Z. Tang, T.V. Chan, J. Wang, J. Tang, F. Younce, A. Al-Shami, L. Hallberg)
4:45PM	066054	Simultaneous Heat and Moisture Movement Firing Microwave Heating of Food , Graham Brodie, Univ of Melbourne, PO Dookie, Australia (G. Brodie)
5:00PM	066055	Effect of Power Level and Pressure on Microwave Vacuum Drying Kinetics of Carrot Slices , Suresh Prasad, Indian Institute of Tech, Kharagpur, India (P.P. Sutar, S. Prasad)

Monday, July 10 – 2:30PM-5:00PM

138-FPE-14 SENSING AND AUTOMATION IN FOOD PROCESSING

(Sponsored by FPE-703)

Moderator: Fred A. Payne, Univ of Kentucky, Lexington, KY and Kevin M. Keener, Purdue Univ, West Lafayette, IN
Location: B119

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	066056	Intelligent Optical Sensor for In-Line Food Processing Applications , Fred A. Payne, Univ of Kentucky, Lexington, KY (F.A. Payne, G. Chandler, M. Castillo, G. Danao)
3:05PM	066058	Prediction of Marked Age of Chinese Rice Wine Based on Fourier Transform Near Infrared Spectroscopy , Haiyan Yu, Zhejiang Univ, Hangzhou, Peoples Republic of China (H. Yu, Y. Ying, X. Fu, H. Lu)
3:20PM	066059	Non-contact Weighing of Animals by Machine Vision , Wade W. Yang, Alabama A&M Univ, Normal, AL (Y. Wang, W. Yang, P. Winter, L. Walker)
3:35PM		Break
3:45PM	066060	Application of Polarized Light to Investigate and Characterize Food Emulsions and Foams , Janakiraman N. Swamy, Univ of Kentucky, Lexington, KY (J.N. Swamy, C. Crofcheck, M.P. Mengüç)
4:00PM	066061	Opto-Electronic Determination of Insect Presence in Fruit , Daniel E. Guyer, Michigan State Univ, East Lansing, MI (D. Guyer, D. Ariana, B. Shrestha, R. Lu)
4:15PM	066062	Real-time X-Ray Detection and Sorting of Olives Damaged by Fruit Fly , Eric S. Jackson, USDAARS, Davis, CA (E.S. Jackson, R.P. Haff)
4:30PM	066063	Rotary Tray for Machine Vision Inspection of Whole Eggplant Fruit , Naoshi Kondo, Ehime University, Ehime, Japan (N. Kondo, K. Ninomiya, J. Kamata, M. Monta, K.C. Ting)

Monday, July 10 – 2:30PM-5:00PM

139-FPE-17 BIOFUELS DEVELOPMENT RESEARCH - PART 2

(Sponsored by FPE-709)

Moderator: Kent D. Rausch, Univ of Illinois, Urbana, IL
Location: B115

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	066064	Nitrogen and Sulfur Concentrations and Flows in Corn Wet Milling Streams , Kent D. Rausch, Univ of Illinois, Urbana, IL (K. Rausch, R. Belyea, T. Clevenger, L. Raskin, V. Singh, M.E. Tumbleson)
3:05PM	066066	Starch Fermentation Characteristics for Different Proportions of Amylose and Amylopectin , Vivek Sharma, Univ of Illinois, Urbana, IL (V. Sharma, V. Singh, K.D. Rausch, M.E. Tumbleson)
3:20PM	066067	Effect of B Vitamin and Lipid Supplementation to Improve Fermentation Characteristics of the Modified Dry Grind Process: Application to High Gravity Fermentations , Ganti S. Murthy, Univ of Illinois, Urbana, IL (G.S. Murthy, V. Singh, K.D. Rausch, D.B. Johnston, M.E. Tumbleson)
3:35PM	066068	Fermentation of Syngas to Produce Ethanol , Brian G. Copeland, Mississippi State Univ, Mississippi State, MS (B.G. Copeland, J.N. Warnock, W.D. Batchelor, W.T. French, E.P. Columbus, J. Wooten)
3:50PM		Break
4:00PM	066069	Biological Conversion of Synthesis Gas to Ethanol using Resting Cells , Jacqueline L. Cotter, North Carolina State Univ, Denver, NC (J.L. Cotter, M.S. Chinn)
4:15PM	066070	In-Field Production of Ethanol from Sweet Sorghum , Dimple K. Kundiyana, Oklahoma State Univ, Stillwater, OK – Presenter Dani Bellmer (D. Kundiyana, D. Bellmer, R. Huhnke, M. Wilkins)

- 4:30PM 066071 **Potential of Temulose IM for Ethanol Production**, Sergio C. Capareda, Texas A&M Univ, College Station, TX (S. Capareda, L.B. Goodrich, R. Kenley, W. Clark)
- 4:45PM 066072 **Hydrogen Production from Organic Matter using Electrochemically Assisted Microbial Reactors**, Hong Liu, Oregon State Univ, Corvallis, OR (H. Liu, Y. Fan)
- 5:00PM 066073 **Nanoparticles Production from Glycerin via Electrospray and Size Measurement**, Sushil Adhikari, Mississippi State Univ, Starkville, MS (S. Adhikari, S. Fernando)

Monday, July 10 – 2:30PM-5:00PM

140-BE-3 INNOVATIVE TECHNOLOGIES FOR ORGANIC FARMING

(Sponsored by BE-22)

Moderator: Hala I. Chaoui, Ohio State Univ, Columbus, OH
Location: Exhibit Hall A

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	067019	Engineering the Biological Control of the Colorado Potato Beetle with the Predatory Stink Bug Perillus bioculatus , Yannick De Ladurantaye, Universite Laval, St Lambert De Levis, QC Canada (Y. de Ladurantaye, M. Khelifi, C. Cloutier) (Poster #55)
2:50PM	067020	Exploring Brassicaceae-derived Biofumigation for Soil-Borne Pest Management , Oleg Daugovish, University of California, Ventura, CA (O. Daugovish, J. Downer, O. Becker, G. Browne) (Poster #56)
3:05PM	067021	HortiBot: Application of Quality Function Deployment (QFD) Method for Horticultural Robotic Tool Carrier Design Planning - Part II , Claus Gron Sorensen, Danish Inst of Agr Sciences, Horsens, Denmark (C.G. Sorensen; R.N. Jorgensen; J.M. Pedersen; H. Thatum; M. Norremark) (Poster #57)
3:20PM	067022	Ridge Tillage of Organic Row Crops , Erik F. Kristensen, Danish Institute of Agricultural Sciences Department of Agricultural Eng., Horsens, Denmark (E.F. Kristensen; C.G. Sorensen) (Poster #58)
3:35PM		Break
3:45PM	067023	HortiBot: Comparison of Potential Present and Future Phytotechnologies for Weed Control- Part III , Michael Noerremark, The Royal Veterinary and Agricultural University, Taastrupph, Denmark (M. Noerremark, C.G. Soerensen, R.N. Joergensen, H.W. Griepentrog) (Poster #59)
4:00PM	067024	Optimizing Land Application Schedules for Organic Fertilizers , David M. Crohn, Univ of California, Riverside, CA (D.M. Crohn) (Poster #60)
4:15PM	067025	Online Platform for Technological Innovations in Organic Farming , Hala I. Chaoui, Ohio State Univ, Columbus, OH (H. Chaoui) (Poster #61)

Monday, July 10 – 2:30PM-5:00PM

141-BE-5 BIOSENSORS (Sponsored by BE-23)

Moderator: Scott Andy Hale, North Carolina State Univ, Raleigh, NC
Location: A103

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	067026	Biosensors for Detection of Foodborne Pathogens: A Review , Yanbin Li, Univ of Arkansas, Fayetteville, AR (Y.Li)
2:50PM	067027	CANCELLED
3:05PM	067028	Development of SAW Biosensors to Detect Salmonella Using Antigen-Antibody Binding , Sangdae Lee, Korea Research Institute of Standards and Science, Yuseong, Daejeon, South Korea (K.-B. Kim, S. Lee, M.Y. Choi, M.S. Kim)
3:20PM	067029	Detection of Escherichia coli 0157:H7 in Water Using an Amperometric Biosensor , Danyelle D. Small, Louisiana State University Agricultural Center, Baton Rouge, LA – Presenter: Chandra Theegala (D. Small, C. Theegala, W.T. Monroe)
3:35PM		Break
3:45PM	067030	Spatio-temporal Processing for Multi-Channel Biosensors Using Support Vector Machines , Yueying Zuo, USDAARS, Ames, IA (Y. Zuo, S. Chakrabarty, Z. Muhammad-Tahir, S.Pal, E.C. Alciocja)
4:00PM	067031	CANCELLED
4:15PM	067032	GaN Nanowire Microfluidic Sensor for Detection of Dissolved Aqueous Species , Barbara C. Williams, Univ of Idaho, Moscow, ID (A. Basu, K. N. Weigandt, B.C. Williams, J.M.F. Jabal, M.Y. LeBaron, D.E. Aston)

EDUCATION

Monday, July 10 – 2:30PM-5:00PM

142-ED-1B INNOVATIONS IN EDUCATION PART 2 (Sponsored by ED-1)

Moderator: Fedro S. Zazueta, Univ of Florida, Gainesville, FL
Location: C120

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	068019	Adopting Technologies with the Help of a Grower's TEAM , Clark F. Seavert, Oregon State University, Hood River, OR (C.F. Seavert, S. Heater)
2:50PM	068020	Instructional Activities Designed to Improve Basic Knowledge for Technical Systems Management Classes , Joe G. Harper, Univ of Illinois, Urbana, IL (J.G. Harper, P. Buriak)
3:05PM	068021	From Precision Agriculture and Precision Forestry to Biomechanics , Hongping Zhou, Nanjing Forestry University College of Mechanical & Electronic Eng., Nanjing, Jiangsu, Peoples Republic of China (J. Zheng, H. Zhou, Y. Xu, L. Xu)
3:20PM		Break
3:30PM	068022	Faculty and Industry Partnerships through Sponsored Research and Design Projects Targeted to Enhance Undergraduate Education , James L. Glancey, Univ of Delaware, Newark, DE (J. Glancey)
3:45PM	068023	Writing Assignments for an Internship Course , Allen P. Zimmerman, Ohio State Univ, Wooster, OH (A. Zimmerman)
4:00PM	068024	Assessing Workplace Competencies in Engineering and Technology Internships , Thomas J. Brumm, Iowa State Univ, Ames, IA (T. Brumm)

Monday, July 10 – 2:30PM-5:00PM

143-ED-INV OPPORTUNITIES IN NON-AGRICULTURALRURAL ECONOMIC DEVELOPMENTFOR ASABE MEMBERS (INVITED SPEAKERS)

Moderator: Billy J. Barfield, Oklahoma State Univ, Stillwater, OK
Location: C121

ASABE members with extensive experience in rural economic development will discuss their successful programs including working with rural infrastructure, rural manufacturers, and rural community development.

2:30PM
2:35PM

Introduction

Broadbased Development, the Arkansas Story, Otto Loewer, University of Arkansas, Fayetteville, AR

2:50PM

Working with Rural Manufacturers in Kentucky, Larry Turner, University of Kentucky, Lexington, KY

3:05PM

University of Georgia Rural Economic Development Activities, Dale Threadgill, University of Georgia, Athens, GA

3:20PM

Making Impacts with Manufacturing Extension Program forRural Manufacturers, Ron Elliott, Oklahoma State University, Stillwater, OK

3:35PM

Break

3:45PM

Partnering with Small Rural Manufacturers forNew Product Development, Larry Hoberock, Oklahoma State University, Stillwater, OK

4:00PM

Business Planning and Marketing Communication Programs forSmall Rural Manufacturers, Dan Tilley, Oklahoma State University, Stillwater, OK

4:15PM

Innovation Training Programs forSmall Rural Manufacturers, Mary Nemcok, Oklahoma State University, Stillwater, OK

4:30PM

Panel Discussion

Monday, July 10 – 2:30PM-5:00PM

144-ED-O-6B SOILAND WATER PROTECTION IN FOREST OPERATIONS (Sponsored byT-12)

Moderator: Johnny M. Grace, III, U.S. Forest Service, Southern Research Station, Auburn, AL

Location: C122

TIME PAPER # P RESENTATION TITLE

2:30PM

Introduction

2:35PM

068025 **Stream Crossings to Protect WaterQuality**, Steven E. Taylor, Auburn Univ, Auburn, AL (S.E. Taylor)

3:05PM

068026 **Soil Property Changes during the Loblolly Pine Production**, Richard Wayne Skaggs, North Carolina State Univ, Raleigh, NC (R.W. Skaggs, D.M. Amaty, C. D. Blanton, G.M. Chescheir)

3:35PM

Break

3:45PM

068027 **Erosion Response of Two Select Soils in Alabama to Clearcut Harvesting**, Emily A. Carter, USDAFS, Auburn, AL(E.A. Carter, J. Fulton, J.M. Grace III)

4:00PM

068028 **Field Performance of Long-Strand Wood Erosion Control Mulch and Agricultural Straw UnderNatural Rainfall Events**, James H. Dooley, Forest Concepts, Federal Way, WA (D.N. Lanning, J.E. Burks, R.B. Foltz)

POWER & MACHINERY

Monday, July 10 – 2:30PM-5:00PM

145-PM INV NEW PRODUCTS - INVITED SPEAKERS (Sponsored by PM)

Moderator: Randy C. Rush, John Deere, Waterloo, IA

Location: A106

2:30PM

Introduction

Each year the AE50 recognition awards honor companies offering the best engineered products for agricultural, food, biological and related systems. These products were new to the marketplace in 2005, and all have the potential for a broad impact in their area or industry. This session is open to everyone and will feature presentations on a sampling of those products receiving 2006 AE50 Awards.

FOOD & PROCESS ENGINEERING INSTITUTE

Monday, July 10 – 2:30PM-5:00PM

146-FPE INVPOST HARVESTTRACKING OFFRUITS AND VEGETABLES USING RFID TECHNOLOGY- INVITED SPEAKERS (Sponsoring Committee: FPE-712)

Moderator: Loren D. Gautz, Agriculture and Agri-Food Canada, Honolulu, HI
Location: B110

Two manufacturers will each give a 30 minute talk on the use of RFID, particularly future implementations of the technology with built-in environmental sensing capability. Following the presentations there will be an open discussion.

2:30PM

Introduction

2:35PM

Infratab, Inc., Terry Myers, Oxnard, CA

3:05PM

Alien Technology, Inc., Mark McDonald, Morgan Hill, CA

3:35PM

Discussion

POWER & MACHINERY

Tuesday, July 11 – 9:30AM-12:00PM

200-PM-7 ADVANCES IN COTTON ENGINEERING - PRODUCTION

(Sponsored by PM-23/7/3)

Moderator: Shay L. Simpson, Texas A&M Univ, College Station, TX

Location: A104

TIME PAPER # P RESENTATION TITLE

9:30AM

Introduction

9:35AM

061076 **Optimization of the Performance of a Precision PlanterMetering Cotton Seed Using Response Surface Methodology**, Adnan Degirmencioglu, EGE Univ, Bornova-Izmir, Turkey (A. Yazgi; A. Degirmencioglu)

9:50AM

061077 **Wireless GPS System forIn-Field Cotton FiberQuality Mapping**, Yu Feng Ge, Texas A & M University, College Station, TX

10:05AM

061078 **Cotton Stickiness Mitigation by Bacteria**, Paul A. Funk, USDAARS, Mesilla Park, NM (P.A. Funk, S.E. Hughs, G.R. Gamble, A. Fleury)

10:20AM

061079 **Spindle Speed Effects on Cotton Quality**, Kevin D. Baker, USDAARS, Mesilla Park, NM (K.D Baker, S.E. Hughs)

10:35AM

Break

10:45AM

061080 **Formation of Neps in Pima Cotton During Mechanical Harvesting**, William B. Faulkner, Texas A&M Univ, College Station, TX (W.B. Faulkner, D.P. Whitlock, D.D. McAlister, B.W. Shaw, C.B. Parnell, J.D. Wanjura)

11:00AM

061081 **Development of an OperatorFeedback System forthe Module Builder**, Robert G. Hardin, IV, Texas A&M Univ, College Station, TX (R.G. Hardin, S.W. Searcy)

11:15AM

061082 **Potential Costs of Not Replacing Worn Module Covers**, Shay L. Simpson, Texas A&M Univ, College Station, TX (S. L. Simpson, S.W. Searcy)

11:30AM

061083 **Features of Work of Horizontal - Shpindle Cotton PickerMachines of American Firm "Case"**, T.A. Khaidarov, Tashkent Irrigation and Melioration Institute, Tiim, Tashkent, Uzbekistan (T. A. Khaidarov)

Tuesday, July 11 – 9:30AM-12:00PM

201-PM-11 MANAGEMENT STRATEGIES FOR MACHINERY

SYSTEMS (Sponsored by PM-43, IET-318)

Moderator: Robert D. Grisso, Jr, Virginia Tech, Blacksburg, VA

Location: A105

TIME PAPER # P RESENTATION TITLE

9:30AM

Introduction

9:35AM

061084 **CANCELLED**

9:50AM

061085 **Spreadsheet Application forMatching PowerUnits with Field Implements**, Robert D. Grisso, Jr, Virginia Tech, Blacksburg, VA (R. Grisso, J. Perumpral, F. Zoz)

10:05AM

061086 **Assessment of Economic and Phosphorus-related Environmental Impacts of Precision Feeding and Forage Management at Farm-scale**, Lula T. Ghebremichael, Penn State Univ, University Park, PA (W.J. Gburek, P.E. Cerosaletti, D. Dewing, C.A. Rotz , T. L. Vieth, J. M. Hamlett)

10:20AM

Break

10:30AM

061087 **A Systems Approach to Forage Harvest Operations**, Dennis R. Buckmaster, Penn State Univ, University Park, PA

10:45AM

061088 **CANCELLED**

11:00AM

061089 **Method forFuel Prediction forSpecific TractorModels**, Robert D. Grisso, Jr, Virginia Tech, Blacksburg, VA (R. Grisso, D. Vaughan, G. Roberson)

11:15AM

061090 **Trafficability Assessment forAgricultural Lands with the Aid of a Soil Compaction Model**, Barend Marx, University of Kwa Zulu-Natal, Scottsville, South Africa – Presenter: Carel Bezuidenhout (B. Marx, C. Bezuidenhout, A. Hansen, T. Wilcox, P. Lyne)

11:30AM

061091 **Effect of Different Planting Density on Cotton Canopy Structure, Canopy Photosynthesis, and Yield Formation**, Jun Zhang, Iowa State Univ, Ames, IA (J. Hou, Q. Dong)

11:45AM

Discussion

Tuesday, July 11 – 9:30AM-12:00PM

202-PM-12 ADVANCES IN SOILDYNAMICS (Sponsored by PM-45)

Moderator: Carol Plouffe, Deere & Co, Moline, IL

Location: A103

TIME PAPER # P RESENTATION TITLE

9:30AM

Introduction

9:35AM

061092 **Dynamic Mechanical Control System forSoil Reconstruction**, Venkata S. Bodapati, Univ of Kentucky, Lexington, KY (V.S. Bodapati, L.G Wells.)

9:50AM

061093 **Development of an Instrumented Portable Device that Measures Shear, Shrinkage, and Friction**, Leroy O. Garciano, Univ of California Davis, Davis, CA (L.O. Garciano, S.K. Upadhyaya, R.A. Jones, S.R. Jersey)

10:05AM

061094 **Soil Viscosity and Yield Stress Measurements Using a Motorized Rheometer**, Subrata Karmakar, Univ of Saskatchewan, Saskatoon, SK Canada (S. Karmakar, R.L. Kushwaha)

10:20AM

061095 **The Discrete Element Method as a Tool forAnalyzing and Optimizing Soil-Implement Interaction**, Itzhak Shmulevich, Israel Inst of Tech, Haifa, Israel

10:35AM

Break

10:45AM

061096 **Torque Requirements and Forces Generated by a Deep Tilling Down-cut Rotary Tiller**, Hendrik LM Du Plessis, Univ of Pretoria, Pretoria, South Africa – Presenter: Moses Marenya (M.O Marenya, HLM du Plessis)

11:00AM

061097 **Rolling Resistance of Automobile Discarded Tyres forUse in Camel Carts in Sand**, Keshaw P. Pandey, Indian Institute of Tech, Kharagpur, India (K.P. Pandey, G. Tiwari)

11:15AM

061099 **Measuring Soil Pressure Distribution in Undisturbed Soil Profiles**, Peter W. Lyne, South African Sugarcane Research Institute, Mt Edgecombe, KZN, South Africa (JLEweg, PWL Lyne, CN Bezuidenhout)

11:30AM

061098 **A Decision Support System (DSS) forSoil Compaction Management**, Carel Bezuidenhout, South Agrican Sugar Association Experiment Station, Mount Edgecombe, KwaZulu Natal, South Africa (BJ Marx, CN Bezuidenhout, PWL Lyne)

11:45AM

Discussion