SESSION NO. 304
Urban and Anthropogenic Soils
Business Meeting
SSSA Division: Urban and Anthropogenic Soils
Marriott Waterside, Grand Ballroom H, Second Level
Presider: Gregory K. Evanylo
4:00 PM–5:00 PM

SESSION NO. 305
General Wetland Soils: I
SSSA Division: Wetland Soils
Marriott Waterside, Grand Ballroom J, Second Level
Presider: Paula M. Gale
9:15 AM–1:45 PM

9:15 AM Introductory Remarks.
305-1 9:20 AM Legacy Phosphorus Implications Of a Large-Scale Mississippi River Diversion Into An Oligohaline Estuary. Nhan Nguyen*
10:20 AM Break.
305-5 10:35 AM Soil Carbon Stocks and Profiles Along the Hydrological Gradient in a Temperate Forested Wetland, Central Korea. Tae Kyung Yoon*, Saerom Han, Lixia Jin, Nam Jin Noh and Yowhan Son
305-6 10:50 AM Two Contrasting Soil and Vegetation Catenas in the Saline Wetlands of Monegros, Spain. Carmen Castañeda, Florias Mees and Juan Herrero*
11:05 AM Lunch Break.
305-7 1:00 PM Assessing the Abiotic Factors Influencing Invasive Species Expansion in a Tropical Wetland Using Geophysical Methods. Melissa Aneika Atwell*, Mark Nakka Wuddivira, Judith F Gobin and David A Robinson
305-8 1:15 PM Hydric Soil Field Indicators For Use in Mid-Atlantic Barrier Island Landscapes. Ann M. Rossi* and Martin C. Rabenhorst
305-9 1:30 PM Nutrient and Trace Element Uptake By Cattail During Remediation of Municipal Biosolids Using a Wetland System: A Microcosm Experiment. ADENIKE OLABISI HASSAN*, Francis Zvomuya and Lisette Ross
1:45 PM Adjourn.

SESSION NO. 306
William H. Patrick, Jr. Memorial Lectureship
SSSA Division: Wetland Soils
TCC, Room 7 and 8, First Floor
Presider: Michael J. Vepraskas
3:30 PM–4:50 PM
3:30 PM Introductory Remarks.
306-1 3:45 PM The Relevance of the “Peatland EnzymicLatch” to Water, Food, Energy, & Innovation for a Sustainable World. Chris Freeman*
4:45 PM Adjourn.

SESSION NO. 307
Wetland Soils Graduate Student Mixer
SSSA Division: Wetland Soils
TCC, Room 7 and 8, First Floor
5:00 PM–7:00 PM

Wednesday, Nov. 6

SESSION NO. 310
Science Policy Graduate Student Luncheon
(preregistration required)
Sponsored by Monsanto Company
Special Sessions
Marriott Waterside, Room 5 and 6, Second Level
12:00 PM–1:00 PM
12:00 PM Introductory Remarks.
310-1 12:05 PM Science Policy in Action: A Panel Discussion on Grad Student Engagement in Advocacy. Karl E. Anderson* and Samantha Shoaf
1:00 PM Adjourn.

SESSION NO. 311
The Political Barrier to Progress in Agricultural Research Lunch and Learn
Special Sessions
TCC, Ballroom A, First Floor
12:00 PM–1:00 PM
12:00 PM Introductory Remarks.
311-1 12:05 PM The Political Barrier to Progress in Agricultural Research. Richard L. Cooper*
12:50 PM Discussion.
1:00 PM Adjourn.

SESSION NO. 312
Grant Writing Workshop for Early Career Members
ACS530 Early Career Member
TCC, Room 1 and 2, First Floor
Presiders: Jean E. McLain; Christopher R. Boomsma
10:30 AM–12:00 PM
SESSION NO. 313

Symposium—International Society For Terrain Vehicle Systems: II
International Society for Terrain-Vehicle Systems (ISTVS)
TCC, Room 7 and 8, First Floor
8:00 AM–3:15 PM
8:00 AM Introductory Remarks.

313-1 8:05 AM Model-Based Development of Safety-Relevant Electronic Control Systems for Agricultural Machines. Massimo Martelli*, Silvia Gessi and Emanuele Tonini

313-2 8:20 AM Environmental Impacts of a Tractor Working On Different Soil Structures. Marie-France Destain*

313-3 8:35 AM A Comparison of Novel Chassis Suspended Machines for Sustainable Forestry. Ulf Sellgren, Abbos Ismoilov*, Kjell Andersson and Björn Löfgren

313-4 8:50 AM Development of a Methodology for Predicting the Bearing Capacity of Rooted Soft Soil. Ulf Sellgren, Abdurasul Pirnazarov* and Björn Löfgren

313-5 9:05 AM Experimental Study of Pneumatic Tire Performance On Ice. Anudeep Kishore Bhoppalam* and Corina Sandu


9:50 AM Break.


313-11 11:05 AM Responses of Tall-Grass Prairie to Anthropogenic Impacts. Heidi R. Howard*, Daniel Koch, Andrew Fulton, Casey Campbell and George Gertner

313-12 11:10 AM Experimental Measurement of Biomass Impact On Soil Strength. Sally A Shoop*, Timothy Cary and Heidi R. Howard

313-13 11:25 AM Above and Below Ground Biomass Effects On Soil Strength and Trafficability. Timothy Cary*, Felicia Johnson, Dustin Kafka and Heidi R. Howard

11:55 AM Lunch Break.
12:55 PM Introductory Remarks After Lunch.

313-14 1:00 PM Off-Road Vehicle Training Impacts On Soil and Vegetation. Alex M. Effinger*, A. Fulton and H. Howard

313-15 1:15 PM Instrumented Below Ground Biomass Sampler. Jose Silvestre-Soto Sr., Kelley MacDonald* and Sally A Shoop

313-16 1:30 PM Validation of the Vegetation and Soil Shear Tester (VASS) With Existing Soil Strength Instruments. Kelley MacDonald* and Sally A Shoop

313-17 1:45 PM Military Vehicle Off-Road Axle Power Requirements As Related to Soil and Tire Compression. Paul Ayers*, Daniel Wade and Matt Ellison

313-18 2:00 PM Data Acquisition and Parameterization Procedure for Large, Off-Road Tires. Joachim Stallmann and Pieter Schalk Els*


313-20 2:30 PM A Method For Unmanned Ground Wheeled Vehicle Mobility Estimation In Stochastic Terrain Conditions. Jeremy P Gray, Vladimir V Vantsevich*, Alexandre Opeiko and Greg R HUDAS


313-22 3:00 PM Calibration and Validation of a Lower-Order Soil Compaction Model Under Non-Uniform Tire Loads Applied By a Dynamic Vehicle Model. Justin Madsen, Paul Ayers* and Dan Negruit

3:15 PM Adjourn.

SESSION NO. 314

ISTVS Lunch: II
International Society for Terrain-Vehicle Systems (ISTVS)
TCC, Riverwalk, First
12:00 PM–1:00 PM

SESSION NO. 315

ISTVS Closing Dinner
International Society for Terrain-Vehicle Systems (ISTVS)
Colombia Restaurant
6:00 PM–9:00 PM
SESSION NO. 316
General Precision Agriculture Systems: I

ASA Section: Agronomic Production Systems
Lead Community: Precision Agriculture Systems Community
Marriott Waterside, Grand Ballroom H, Second Level
Presider: Brenda Ortiz
7:55 AM Introductory Remarks.

316-1 8:00 AM A Specific Precision Placement Protocol for Maximum Productivity. Charles LeRoy Deichman*


316-3 8:30 AM Comparing Grid and EC, Directed Zone Soil Sampling Schemes for Peanut Production. Ashley Mason*, Ronnie W. Schnell, Jason A. Ferrell, Ramon G. Leon and Won Suk Lee

316-4 8:45 AM Calibrating An Algorithm for On-the-Go Nitrogen Management for Second-Season Production of Corn in the Brazilian Cerrado. Luciano Shozen Shiratsuchi, Welington Gonzaga Vale and Tiago Jose Malacarne

316-5 9:00 AM Utilizing Combine Yield Monitor Data to Verify a Variable Rate Corn Planting Recommendation. C. Gregg Carlson, Kyle Gustafson*, David E. Clay and Joseph Schumacher


316-7 9:30 AM Spatial Variability of Soil Chemical Attributes Under Irrigation and No-Tillage System in Tropical Region. Jose Marcos Garrido Beraldo* Sr. and Paulo Estevao Cruvinel Sr.


316-9 10:00 AM Spatial Analysis of Production Data for Precision Agriculture. Rong-Cai Yang*, Zhiqiu Hu, Moshhood Bakare, Ty Faechner and Steve Larocque

316-10:15 AM Using Uav to Monitor Crop Nutrient and Water Stress At Field Scale. Bruno Basso* and Ryan Nagelkirk

10:30 AM Discussion.
10:45 AM Adjourn.

SESSION NO. 317
General Organic Management Systems: II

ASA Section: Agronomic Production Systems
Lead Community: Organic Management Systems Community
Marriott Waterside, Grand Ballroom C and D, Second Level
8:00 AM Introductory Remarks.

317-1 8:05 AM Adapting An Organic Rotational No-Till System for the Northern Climate of Western Canada. Caroline Halde*, Martin H. Entz, Robert H Gulden, Mario Tenuta, Andy Hammermeister and Kim Ominski

317-2 8:20 AM Controlling Weeds With High Residue Cultivation in Cover Crop-Based Organic Rotational Soybean Production. Gladis M. Zinati*, Stevert Mirsky, Rita Seidel, Jeffrey W Moyer and Elaine R Ingham

317-3 8:35 AM Evaluating In-Season Tests to Guide Nitrogen Topdressing Rates for Organic Winter Bread Wheat. Ellen B. Mallory* and Heather M. Darby

317-4 8:50 AM Legume Alleyway Groundcovers Influence Tree-Row Soil Quality in An Organic Orchard. Catherine Mae Culumber*, Jennifer R. Reeve and Brent Black

317-5 9:05 AM Utilizing Zone-Tillage and Cover Crop Spatial Arrangements To Improve The Temporal and Spatial Availability Of Nitrogen In Organic Sweet Corn Production. Carolyn J Lowry* and Daniel C Brainard

317-6 9:20 AM The Effects Of Row Spacing and Seeding Rate On Weed Competition and Yield In Organic Canola Production. Rachel A. Atwell*, Carrie M. Brinton and Samuel Christopher Reberg-Horton

9:35 AM Break.

317-7 9:50 AM The Impacts of Soil Amendments On Organic Rice Production. Fugen Dou*, Anna M. Mcclung and Xingen Zhou

317-8 10:05 AM Tillage Impact On Soil Quality Within An Organic, Sod-Based Vegetable Rotation. Christine M. Bliss*, Peter C. Andersen, Cheryl Mackowiak, Steve Olson, David L. Wright, Ann Blount, James Marois and Russ Mizell

317-9 10:20 AM Utilizing 15N To Understand Rye Mulch Effects On Soybean/Weed Competition. S. Chris Reberg-Horton*, M. Scott Wells, Steven Mirsky, Jude Maul and Shuiffin Hu

317-10:35 AM Cover Cropping and Reduced Tillage for Mixed Vegetable Farms In Southern New England. Jeff Pieper, Emily Cotter and Rebecca N. Brown*


11:05 AM Adjourn.

SESSION NO. 318
Symposium—The Role and Challenges of Cover Crops in Semi-Arid Dryland Cropping Systems

ASA Section: Agronomic Production Systems
Lead Community: Semi-arid Dryland Cropping Systems Community
Marriott Waterside, Grand Ballroom G, Second Level
Presiders: Alan J. Schlegel; Calvin L. Trostle

8:05 AM–11:05 AM

8:05 AM Introductory Remarks.

### AGRONOMIC PRODUCTION SYSTEMS — SESSION NO. 319

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>318-2 8:30 AM</td>
<td>Research Experience With Cover Crops in the Semi-Arid Northern U.S. Great Plains. Perry R. Miller*, Mark A. Liebig, Macdonald Burgess, Clain A. Jones, Justin O’Dea, Scott L. Kronberg and David W. Archer</td>
</tr>
<tr>
<td>318-3 8:50 AM</td>
<td>NRCS Soil Quality/Soil Health Program—Research Needs To Address Potential and Pitfalls Of Cover Crops In Semi-Arid Cropping Systems. Ray Archuleta*</td>
</tr>
<tr>
<td>318-4 9:10 AM</td>
<td>Impact Of Cover Crops In Semi-Arid Cropping Systems On Soil Biological, Chemical and Physical Parameters. Kristine A. Nichols* and Veronica Acosta-Martinez</td>
</tr>
<tr>
<td>318-5 9:30 AM</td>
<td>Adaptation Of Cover Crops In The Texas Rolling Plains. Paul B. DeLaune*</td>
</tr>
<tr>
<td>9:50 AM</td>
<td>Break.</td>
</tr>
<tr>
<td>318-6 10:05 AM</td>
<td>Cover Crop Challenges and Options In North Africa and West Asia. David Feindel*, Mounir Louhaichi, Stephen Loss and Serkan Ates</td>
</tr>
<tr>
<td>318-7 10:25 AM</td>
<td>Re-Evaluating Cover Crops In Semi-Arid Cropping In Australia. John Kirkegaard*, James R. Hunt, Jeremy Whish, Mark Peoples, Anthony Swan and Andrew Fletcher</td>
</tr>
<tr>
<td>318-8 10:45 AM</td>
<td>Simulated Effects Of a Cover Crop On The Yield Of a Following Crop Using Process-Based Modeling. Joel Poore*</td>
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<tr>
<td>11:25 AM</td>
<td>Discussion.</td>
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<tr>
<td>11:45 AM</td>
<td>Community Business Meeting.</td>
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### SESSION NO. 319

**Symposium—Active Optical Sensors For Adaptive Nitrogen Management**

ASA Section: Agronomic Production Systems  
Lead Community: Adaptive Nutrient Management  
Community Co-sponsor: Sensor-Based Nutrient Management  
Marriott Waterside, Grand Ballroom A and B, Second Level  
**Presiders:** Joshua M. McGrath; Thomas F. Morris  
8:15 AM–3:25 PM  
**8:15 AM Introductory Remarks.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>319-2 8:45 AM</td>
<td>Adapting N Recommendations Using Data From Spatial and Temporal Scales Or Different Levels of Adaptive Management. Douglas B. Beegle*</td>
</tr>
<tr>
<td>319-3 9:10 AM</td>
<td>Converting Light Reflectance to Nitrogen Requirement: Different Approaches. James S. Schepers*</td>
</tr>
<tr>
<td>319-4 9:35 AM</td>
<td>On-Farm Evaluation Tools and Approaches to Quantify Risks In Nitrogen Management. Peter M. Kyveryga* and Tracy M. Blackmer</td>
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<tr>
<td>10:00 AM</td>
<td>Break.</td>
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<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>319-6 10:40 AM</td>
<td>Can Models and Weather Databases Enhance the Use of Sensor-Based Nitrogen Management? Harold van Es*, Jeff J. Melkonian and Bianca Moebius-Clune</td>
</tr>
<tr>
<td>319-7 11:05 AM</td>
<td>Engineering Considerations in Sensor-Based Nutrient Management. Kenneth A Sudduth* and Scott T Drummond</td>
</tr>
<tr>
<td>319-8 11:30 AM</td>
<td>Sensor-Based Nitrogen Management: Adaptation to Irrigated Systems. Richard B. Ferguson*</td>
</tr>
<tr>
<td>11:55 AM</td>
<td>Lunch Break.</td>
</tr>
<tr>
<td>319-9 1:15 PM</td>
<td>Incorporating Adaptive Approaches Such As Sensor-Based Management in the Chesapeake Bay TMDL Process. Joshua M. McGrath*, Wade E. Thomason and Mark S. Reiter</td>
</tr>
<tr>
<td>319-11 2:05 PM</td>
<td>Precision Technologies to Determine Optimum Nitrogen Management in Europe. Roger Sylvester-Bradley and Daniel Kindred*</td>
</tr>
<tr>
<td>319-12 2:30 PM</td>
<td>Global Potential for Adaptively Managing Nitrogen Using Active Sensors. Steve Phillips*</td>
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<tr>
<td>3:10 PM</td>
<td>Concluding Remarks.</td>
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<tr>
<td>3:25 PM</td>
<td>Adjourn.</td>
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### SESSION NO. 320

**Organic Management Systems Community Business Meeting**

ASA Section: Agronomic Production Systems  
Lead Community: Organic Management Systems Community  
Marriott Waterside, Grand Ballroom C and D, Second Level  
**Presider:** Joseph R. Heckman  
11:05 AM–12:05 PM

### SESSION NO. 321

**Semi-Arid Dryland Cropping Systems Community Business Meeting**

ASA Section: Agronomic Production Systems  
Lead Community: Semi-arid Dryland Cropping Systems Community  
Marriott Waterside, Grand Ballroom G, Second Level  
**Presider:** Calvin L. Trosilfe  
11:45 AM–12:15 PM

### SESSION NO. 322

**Crop Irrigation Strategies and Management Community Business Meeting**

ASA Section: Agronomic Production Systems  
Lead Community: Crop Irrigation Strategies and Management  
Marriott Waterside, Florida Salon VI, Second Level  
**Presiders:** R. Louis Baumhardt; David Brauer  
12:00 PM–1:00 PM  
12:00 PM Introductory Remarks.  
12:05 PM Community Business Meeting.  
12:15 PM Lunch Break.  
1:00 PM Adjourn.
SESSION NO. 323
General Semi-Arid Dryland Cropping Systems: I
ASA Section: Agronomic Production Systems
Lead Community: Semiarid Dryland Cropping Systems Community
Marriott Waterside, Grand Ballroom G, Second Level
Presiders: Omololu J. Idowu; William F. Schillinger
12:55 PM–3:30 PM

323-1 1:00 PM Selecting Adaptable Cover Crops for the Desert Southwest Cropping Systems. Kulbhushan K. Grover*, Omololu J. Idowu, Nazar Al-Ibraheemi and Mohammed Omer


323-3 1:30 PM Natural Suppression of Rhizoctonia Bare Patch in a Long-Term No-Till Cropping Systems Experiment. William F. Schillinger and Timothy C. Paulitz


323-5 2:00 PM Contribution of Winter Annual Cover Crops in Conservation Tillage Corn Production. Danielle D Treadwell*, Joel Love, Mace Bauer, Michael Alligood and Kirk Brock

2:15 PM Break.

323-6 2:30 PM Screening of Green Manure Legumes Adaptable to the Desert Southwest. Omololu J. Idowu*, Kulbhushan K. Grover, Mohammed Omer and Nazar Al-Ibraheemi

323-7 2:45 PM Cropping Under Drought Conditions. Robert N. Klein*

323-8 3:00 PM Barley Cultivar Performance Following Canola, Corn, Pea, and Spring Wheat. Patrick M. Carr*, Glenn B. Martin, Richard D. Horsley and Martin R. Hochhalter


3:30 PM Adjourn.

SESSION NO. 324
Professional Applied Agronomists Community Business Meeting
ASA Section: Agronomic Production Systems
Lead Community: Professional Applied Agronomists Community
Marriott Waterside, Grand Ballroom H, Second Level
Presider: E. James Dunphy
1:00 PM–2:00 PM

SESSION NO. 325
Weedy and Invasive Plants
ASA Section: Agronomic Production Systems
Lead Community: Weedy and Invasive Plant Species Community
Marriott Waterside, Grand Ballroom C and D, Second Level
1:30 PM–2:05 PM
1:30 PM Introductory Remarks.

325-1 1:35 PM Echium As An Oilseed Crop in Minnesota: Flowering Dates, Pollinators, and Seed Yields. Frank Forcella*, Carrie A Eberle, Dean Peterson and James Eklund

SESSION NO. 327 — AGRONOMIC PRODUCTION SYSTEMS
325-2 1:50 PM Assessment of Allelopathic Potential in Rice - Exploration of Two Promising Allelochemicals. Thi Le Ho*, Felix B. Fritschi and Chung-Ho Lin

2:05 PM Adjourn.

SESSION NO. 326
Weedy and Invasive Plant Species Community Business Meeting
ASA Section: Agronomic Production Systems
Lead Community: Weedy and Invasive Plant Species Community
Marriott Waterside, Grand Ballroom C and D, Second Level
Presider: John L. Lindquist
2:05 PM–2:30 PM

SESSION NO. 327
General Bioenergy Systems: II
ASA Section: Agronomic Production Systems
Lead Community: Bioenergy Systems Community
TCC, East Hall, Third Floor
2:30 PM–4:30 PM
327-1 812 Corn Stover and Cobs Ethanol Yield As Affected By Hybrid, Bt Trait, and Environment. Pavani Tumbalam*, Kurt D. Thelen, Andrew Adkins and Juan Gao

327-2 813 Switchgrass Harvest Yield Is Maximized During a Fall Harvest Using a Direct Chop and Ensilage Method. Andrew Adkins* and Kurt D. Thelen

327-3 814 Corn and Switchgrass Companion Cropping. Allen Parrish* and Dokyoung Lee

327-4 815 Interspecific Hybridization Between Elphantgrass and Pearl Millet and Selection of Hybrids With High-Biomass Production and Enhanced Biosafety. Baskaran Kannan*, Elide Valencia and Fredy Altpeter

327-5 816 Nutrient Removal and Allocation in Napiergrass Treated With Swine Lagoon Effluent. John J. Read*, Ardeshir Adeli and William F. Anderson

327-6 817 Seasonal Changes In Nitrogen and Fiber Fraction Concentrations Of Warm-Season Perennial Bioenergy Grasses In The USA Gulf Coast Region. Chae-In Na*, Lynn E. Solrenberger, John E. Erickson, Joao Vendramini, Maria Lucia A. Silveira, Marcelo Osório Walolu and Kenneth Woodard

327-7 818 Carbon Dioxide Exchange In Switchgrass and High Biomass Sorghum Ecosystems In The Southern Great Plains Of The United States. Pradeep Wagle and Vijaya Gopal Kankan*.

327-8 819 Sweet Sorghum, a Potential Biofuel Crop for the Mid-Atlantic. Robert J. Kratochvil, Samuel Geleta* and Chris Briand

327-9 820 Biomass Production Potential of Miscanthus, Switchgrass, and Willow in the Northeastern United States. Armen R. Kemanian*, Eric Fabio, Larry Smart, Peter B. Woodbury, Felipe Montes, Timothy Volk, Wei Jiang and Brian K. Richards

327-10 821 Nitrogen Cycling In Sweet Sorghum With Winter Crop Rotations In Florida. Jeffrey Robert Fedenko*, John E. Erickson, Diane L. Rowland, Danielle D Treadwell and Ann Wilkie
327-11 822 Alley Cropping Systems for Biomass Production in River Floodplains. Sougata Bardhan* and Shibu Jose


327-14 901 The Economic Viability of Cellulosic Biomass Production On Marginal Land in the Northern Great Lakes Region. Brad Kells* and Scott M. Swinton


327-16 903 Belowground Biomass and C Dynamics in Sugarcane and Ratooning Energycane Cultivated As Biofuel Production In Hawaii. Adel Youkhana*, Susan E. Crow, Richard M. Ogoshi and Mae Nakata

327-17 904 Bioethanol and Biodiesel Production in Hungary. Janos Nagy and Orsolya Nagy*

327-18 905 Carbon Accumulation in a Two Year Sugarcane Rotation in Hawaii I, USA. Ray Anderson*, Rebecca Tirado-Coralá, Dong Wang and James E Ayars


327-20 907 Diagnosis Of Nutrient Imbalance In HLB Infected Citrus Trees Using Drs and Cnd Approaches. Shengsen Wang* and Arnold Schumann


SESSION NO. 328 General Crop Irrigation Strategies and Management: II

ASA Section: Agronomic Production Systems
Lead Community: Crop Irrigation Strategies and Management
TCC, East Hall, Third Floor
Presider: R. Louis Baumhardt
2:30 PM–4:30 PM

328-1 909 Intercropping and Monocropping of Arabica Coffee and Macadamia Nut With and Without Drip Irrigation. Rogerio Peres Soratto* and Marcos José Perdona


328-3 911 Radiation Use Efficiency and Yield in Drought Tolerant Corn in the Texas High Plains. Baoyisen Hao*, Qingwu Xue, Thomas H Marek and Kirk E Jessup

328-4 912 Rice Physiological Responses to Flooded, Saturated and Aerobic Rice Management Systems. Abdul R. Mohammed* and Lee Tarpley

328-5 913 Advanced Citrus Production Systems: Four Years of Evaluation in Florida. Arnold Schumann*

328-6 914 Irrigation Management of Emerging Drought-Tolerant Corn Hybrids. John Randall Nelson* and Eric A. Adee

328-7 915 Emergence, Yield, Ion Relations and Physiological Parameters of Alfalfa (Medicago sativa L.) in Response to Salinity Stress. Monica V. Cornacchione* and Donald L. Suarez

328-8 916 Salt Tolerance Of Spinach As Related To Seasonal Climate. Selda Ors* and Donald L. Suarez

328-9 917 Comparing Tillage Systems (conventional, minimum, no-till) With Overhead Irrigation Using a 3 Year Crop Rotation of Corn, Soybean, and Barley. Tyler J Tjelde* and James A. Staricka
SESSION NO. 330
General Professional Applied Agronomists: II
ASA Section: Agronomic Production Systems
Lead Community: Professional Applied Agronomists Community
TCC, East Hall, Third Floor
2:30 PM–4:30 PM
330-1 1005

SESSION NO. 331
General Semi-Arid Dryland Cropping Systems: II
ASA Section: Agronomic Production Systems
Lead Community: Semiarid Dryland Cropping Systems Community
TCC, East Hall, Third Floor
2:30 PM–4:30 PM
331-1 1009
Agronomy of Guar (Cyamopsis Tetragonoloba) in the Southwest U.S. Calvin L. Trostle* and Dick L. Auld

SESSION NO. 332
General Weedy and Invasive Plant Species: II
ASA Section: Agronomic Production Systems
Lead Community: Weedy and Invasive Plant Species Community
TCC, East Hall, Third Floor
2:30 PM–4:30 PM
332-1 1100
Effect of Cold Temperature and the Effectiveness of Glyphosate ([N-(phosphonomethy] Glycine) and 2,4-Dichlorophenoxyacetic Acid When Applied to Chickweed (Stellera media). Makenzie Wippel*

SESSION NO. 333
Adaptive Nutrient Management Business Meeting
ASA Section: Agronomic Production Systems
Lead Community: Adaptive Nutrient Management Community
Marriott Waterside, Grand Ballroom A and B, Second Level
Presider: Joshua M. McGrath
3:25 PM–4:00 PM

SESSION NO. 334
General Model Applications In Field Research: II
ASA Section: Climatology & Modeling
Lead Community: Model Applications in Field Research Community
TCC, Room 37 and 38, Third Floor
8:00 AM–10:55 AM
8:00 AM Introductory Remarks.
334-1 8:05 AM

SESSION NO. 335
Sustainability Of Cropping Systems For Dryland Winter Wheat Production: A Simulation Approach. Gurpreet Kaur* and Axel Garcia y Garcia

SESSION NO. 336
Wide Row Spacing for Deep-Furrow Planting of Winter Wheat. William F. Schillinger* and Stewart B. Wuest

SESSION NO. 337

SESSION NO. 338
Maize Plant Growth and Yield Response to Jumpstart LCO. Roger L. Bowman* and Robert L. Pesek

SESSION NO. 339
Penicillium Biliaiae and Its Effect On Phosphorus Uptake On Spring Wheat (Triticum aestivum). Robert L. Pesek*

SESSION NO. 340
Dryland Malt Barley Yield and Quality in Multi-Species Cover Crops in Fallow-Wheat Sampling. Quanzhen Wang*, Guo Chen, Jian Cui, Yuan Liu, Muyu Gu and Xiaomin Ma

SESSION NO. 341
Evaluating Adaptability Of Guar In New Mexico. Kulbhushan K. Grover*, Sudhir Singhla and Sangamesh V. Angadi

SESSION NO. 342
Dryland Malt Barley Yield and Quality in Response to Tillage, Cropping Sequence, and Nitrogen Fertilization. Upendra M. Sainju*, Andrew W. Lenssen and Joy Lynn Barsotti

SESSION NO. 343
6:00 PM–7:00 PM
Panel Discussion

SESSION NO. 344
Phosphorus Application Influences the Critical Period of Weed Control in Lettuce. Dennis Calvin Odero* and Alan L. Wright

SESSION NO. 345
Quantifying and Modeling Crop Growth During Germination and Seedling Growth in Switchgrass (Panicum virgatum L.). Quanzhen Wang*, Guo Chen, Jian Cui, Yuan Liu, Muyu Gu and Xiaomin Ma

SESSION NO. 346
Dry Soil Planting of Sorghum for Variable Onset of Rains in Ethiopia. Feverya Liben Menga, Charles S. Wortmann* and Tesfaye kinde

SESSION NO. 347

SESSION NO. 348
In-Situ Plastic Mulching Technology Dramatically Increases Water-Use Efficiency and Enhances Food Production. Weifeng Zhang*, Fusuo Zhang and Zhengxia Dou

SESSION NO. 349

SESSION NO. 350
Intensification of Summer Cover Crops Within Integrated No-Till Cropping Systems in Oklahoma. Kevin B. Meeks* and Jason G. Warren

SESSION NO. 351
Multi-Species Cover Crops in Fallow-Wheat No-Till Systems in Montana. Susan Tallman*, Perry R. Miller, Cathy Zabinski and Clain A. Jones
CLIMATOLOGY & MODELING—SESSION NO. 335

168

335-1  8:05 AM  Simulating Water and Nitrogen Requirements for Maize Under Semi-Arid Conditions Using the CSM–CERES-Maize Model. Hafiz Mohkum Hammad*


335-3  8:35 AM  Soybean Yield Gap Analysis and N Balances in Agricultural Systems of Argentina As Quantified By the CropGro-Soybean Model. Fernando Salvagiotti*, Gustavo Ovando and Collino Daniel

335-4  9:00 AM  Soybean Yield Gap Analysis and N Balances in Agricultural Systems of Argentina As Quantified By the CropGro-Soybean Model. Fernando Salvagiotti*, Gustavo Ovando and Collino Daniel


335-6  10:05 AM  Soybean Yield Gap Analysis and N Balances in Agricultural Systems of Argentina As Quantified By the CropGro-Soybean Model. Fernando Salvagiotti*, Gustavo Ovando and Collino Daniel

335-7  10:30 AM  Soybean Yield Gap Analysis and N Balances in Agricultural Systems of Argentina As Quantified By the CropGro-Soybean Model. Fernando Salvagiotti*, Gustavo Ovando and Collino Daniel

335-8  10:45 AM  Soybean Yield Gap Analysis and N Balances in Agricultural Systems of Argentina As Quantified By the CropGro-Soybean Model. Fernando Salvagiotti*, Gustavo Ovando and Collino Daniel


SESSION NO. 335

General Global Climate Change: II

ASA Section: Climatology & Modeling
Lead Community: Global Climate Change Community
TCC, Room 33, Third Floor

Presider: Saseendran S. Anapalli

8:00 AM—11:35 AM

8:00 AM Introductory Remarks.

335-1  8:05 AM  Soybean Responses to to Ultraviolet-B Radiation. Suresh Bajarao Lokhande, Karande Gajanayake, K. Raja Reddy* and Wei Gao

335-2  8:20 AM  Retrofit of a Soil-Plant-Atmosphere-Research (SPAR) Experimental Database for Application in Agmips. Gerard W. Wall*


335-5  9:05 AM  Agro Climatic Models for Prediction of Growth and Yield of Rice (Oryza sativa L.). Subbaiah GazuLa* Sr.

335-6  9:20 AM  Examining the Responses of Radiation Use Efficiency to CO2: A New Approach. Oscar Monje*

335-7  9:35 AM  Break.


335-9  10:00 AM  Site-Specific Impacts of Climate Change On Crop Productivity in the Context of Multiple Global Changes During 1951-2099. Wei Ren* and Hanqin Tian

335-10 10:15 AM  Site-Specific Impacts of Climate Change On Crop Productivity in the Context of Multiple Global Changes During 1951-2099. Wei Ren* and Hanqin Tian

335-11 10:30 AM  Site-Specific Impacts of Climate Change On Crop Productivity in the Context of Multiple Global Changes During 1951-2099. Wei Ren* and Hanqin Tian

335-12 10:45 AM  Site-Specific Impacts of Climate Change On Crop Productivity in the Context of Multiple Global Changes During 1951-2099. Wei Ren* and Hanqin Tian

11:00 AM Concluding Remarks.

SESSION NO. 336

Model Applications In Field Research Community Business Meeting

ASA Section: Climatology & Modeling
Lead Community: Model Applications in Field Research Community
TCC, Room 37 and 38, Third Floor

Presider: Jerry L. Hatfield

11:10 AM—11:40 AM

SESSION NO. 337

Global Climate Change Community Business Meeting

ASA Section: Climatology & Modeling
Lead Community: Global Climate Change Community
TCC, Room 37 and 38, Third Floor

Presider: David H. Fleisher

12:05 PM—12:30 PM

SESSION NO. 338

Agroclimatology and Agronomic Modeling Community Business Meeting

ASA Section: Climatology & Modeling
Lead Community: Agroclimatology and Agronomic Modeling
TCC, Room 37 and 38, Third Floor

Presider: Claudia Wagner-Riddle

12:30 PM—1:15 PM
SESSION NO. 343

General Extension Education: II
ASA Section: Education & Extension
Lead Community: Extension Education Community
TCC, Room 12, First Floor
Presider: Shaun Casteel
7:55 AM–10:50 AM

7:55 AM Introductory Remarks.

343-1 8:00 AM Public Education On Food and Nutrition for the Marginal and Small Farm Families in Bangladesh. S.M. Hasen Ali*, Sarder Tasadaque Ahmed and Uttam K. Saha

343-2 8:15 AM Deliver the Right Information to the Right People With Email Segmentation. Andrew M. McGuire*

343-3 8:30 AM Texas Well Owner Network: Protecting Groundwater Resources and Human Health. Drew M. Gholson*, Diane E. Boellstorff, Ryan A. Gerlich, John W. Smith and Mark L. Mcfarland


9:00 AM Break.

343-5 9:10 AM Farmer Soil Health and Soil Ecology Education. James John Hoorman*


343-7 9:40 AM Poultry Litter Storage and Utilization Program for Kansas Crop Producers. Peter J. Tomlinson*

343-8 9:55 AM Trends Of The Arkansas Corn and Grain Sorghum Research Verification Program. Kevin Lawson* and Jason Kelley

10:10 AM Break.

343-9 10:20 AM Conservation Tillage in California’s Central Valley: Understanding Adoption Barriers to Enhance Extension Education. Anne Bossange*, Ron Harben and Jeffrey Mitchell

343-10 10:35 AM Delivery of Extension Education On Climate Change Mitigation and Adaptation. Tracy M Wilson and Jason G. Warren*

10:50 AM Adjourn.

SESSION NO. 344

Extension Education Community Business Meeting
ASA Section: Education & Extension
Lead Community: Extension Education Community
TCC, Room 12, First Floor
Presider: Daryl Brian Arnall
11:00 AM–12:00 PM

SESSION NO. 345

General Advancing Agronomy Via Public-Private Collaboration: I
ASA Section: Education & Extension
Lead Community: Advancing Agronomy Via Public-Private Collaboration Community
TCC, Room 12, First Floor
12:55 PM–1:30 PM
12:55 PM Introductory Remarks.

345-1 1:00 PM Increasing Feed Grains in North Carolina: An Integrated Approach. Wesley J. Ever- man*, Ronnie W. Heiniger, P. Randall Weisz and Ranjit S. Riar

345-2 1:15 PM Potential of Urban Agriculture to Improve Nutrition and Environment. Ib Hagsten* and Julia Govis

1:30 PM Adjourn.

SESSION NO. 346
Advancing Agronomy Via Public-Private Collaboration Community Business Meeting

ASA Section: Education & Extension
Lead Community: Advancing Agronomy Via Public-Private Collaboration Community
TCC, Room 12, First Floor
Presider: Harold F. Reetz Jr.
1:30 PM–2:30 PM

SESSION NO. 347
General Advancing Agronomy Via Public-Private Collaboration: II

ASA Section: Education & Extension
Lead Community: Advancing Agronomy Via Public-Private Collaboration Community
TCC, East Hall, Third Floor
2:30 PM–4:30 PM

347-1 1104 Estimating Alfalfa’s Impact On Regional Nitrogen Budgets in the Central & Santa Clara Valleys of California Using the 15N Stable Isotope Natural Abundance Method. Jarred Sturla*

347-2 1105 Food Aid In Somalia – Challenges Ahead. Paul M. Porter* and Hussein Haji

347-3 1106 The 100th Graduate From the Iowa State University Master of Science in Agronomy Distance Program. Allan J. Ciba*, Gretchen Anderson, Dawn Miller and Kenneth J. Moore

347-4 1107 Effects of Enzyme Activity of Soil in Area Submitted to Pasture in the Roraima State, Amazonia, Brazil. Sandra Catia Pereira Uchoa*, Fernando Gil-Sodres, Carmen Trasarc-Cepeda, Maria Carmen Leiros, José Maria Arcanjo Alves and Ana Isabel Iglesies Tojo


347-6 1109 Ratio Solid – Air - Water In Mixtures Of Biosolid and Carbonized Rice Husk For Agricultural Use As Substrate. Luiz Vitor Crepaldi Sanches*, Maria Julia Carreiro Lima Ferreira, Roberto Lyra Villas Boas, Thomas Fiore de Andrade, Bruno Marcos de Paula Macedo and Camila Abrahão

347-7 1110 Ratio Solid - Air - Water Of Coconut Fiber In Function To Different Particle Sizes. Luiz Vitor Crepaldi Sanches*, Maria Julia Carreiro Lima Ferreira, Roberto Lyra Villas Boas, Thomas Fiore de Andrade, Bruno Marcos de Paula Macedo and Camila Abrahão

347-8 1111 Macro and Microporosity Of Different Particle Size Of Fiber Coconut. Maria Julia Carreiro Lima Ferreira, Luiz Vitor Crepaldi Sanches*, Roberto Lyra Villas Boas and Thomas Fiore de Andrade

347-9 1112 Macro and Microporosity Of Mixtures Of Biosolid and Carbonized Rice Husk For Use As Agricultural Substrate. Maria Julia Carreiro Lima Ferreira, Luiz Vitor Crepaldi Sanches*, Roberto Lyra Villas Boas and Thomas Fiore de Andrade

347-10 1113 Growth and Productivity of Coffee and Macadamia Cultivars in Intercropping Irrigated. Marcos José Perdoná* and Rogerio Peres Soratto

347-11 1114 How Do Different Fertilizers Hold Up to One Another? spencer muriah Williams*

SESSION NO. 348
Symposium—Phosphorus Fate, Management, and Modeling in Artificially Drained Systems: I

ASA Section: Environmental Quality
Lead Community: Nutrients and Environmental Quality Community Section or Division Cosponsors: Soil & Water Management & Conservation, Soils & Environmental Quality
TCC, Room 16, First Floor
Presider: Peter J. A. Kleinman
7:50 AM–12:25 PM
7:50 AM Introductory Remarks.

348-1 8:00 AM Diffuse Losses of Phosphorus From Agricultural Soils - Status and Preventive Measures in a Nordic Perspective. Lars Bergström*, Helena Andersson, Helena Aronsson, Faruk Djodjic, Holger Kirchmann, Pia Kynkäänniemi, Jian Liu, Annika Svanbäck, Barbro Ulén and Ana Villa


348-3 8:40 AM Management of Phosphorus Losses From Artificially Drained Grazed Pastures. Richard McDowell* and Chris Tanner

9:00 AM Break.

348-4 9:10 AM Case Studies: Drainage Water Phosphorus Losses in the Great Lakes Basin. Douglas R. Smith*, R. Peter Richards, Kevin King, David Baker, Wendy Francesconi and Andrew N. Sharpley


348-8 9:50 AM Vulnerability of Karst Aquifers to Agricultural Contaminants: A Case Study in the Pennyroyal Plateau of Kentucky. Carl H. Bolster*, Chris Groves, Jason Polk, Ben Miller, Brian Ham and Sean Vanderhoff

10:00 AM Discussion.

10:20 AM Break.

10:35 AM Introduction to Management Section.

348-9 10:40 AM Vegetation’s Role in Mitigation of Phosphorus From Agricultural Ditch Systems. Matthew T. Moore*, Martin A. Locke, Robert Kroger, Jerry L Farris, Heather L Tyler and Traci C Hudson


348-11 11:00 AM Factoring P Into N-Based Controlled Drainage Management. Jeffrey S. Strock*, Paulo Humberto Pagliari, Gary Feyereisen and Stacey Feser

348-12 11:10 AM Phosphorus Export In Cranberry Floodwaters. Casey Kennedy*, Carolyn DeMoranville and Peter J. A. Kleinman


348-16 11:50 AM In-Field and Edge-of-Field Chemical Barriers to Dissolved Phosphorus Losses. Ray B. Bryant*, Zachary Easton, Anthony R. Buda and Arthur L. Allen

12:00 PM Discussion.

12:25 PM Adjourn for Lunch.

SESSION NO. 349

Environmental Quality General Session: I

ASA Section: Environmental Quality

TCC, Room 9, First Floor

President: Jacob P. McDaniel

7:55 AM Introductory Remarks.

349-1 8:00 AM Comparison of Herbicide Loss At The Field–Scale a Multi-Year Investigation. Timothy Gish*, John H. Prueger, William Kustas, Lynn McKee, Andrew L. Russ, Jerry L. Hatfield and Craig S. T. Daughtry


349-3 8:30 AM Earthworm Affect On Chemical Leaching. Jacob P. McDaniel*, Greg Butters, Kenneth A. Barbarick and Mary E. Stromberger

349-4 8:45 AM Distribution, Efficacy, and Off-Tarp Emissions Of Carbonated Fumigants In Low Permeability Film Tarped Field. Ruijun Qin*, Suduan Gao, Brad Hanson, James Gerik and Dong Wang

349-5 9:00 AM Effects of Cr6+ On the Activities of Antioxidant Enzymes of Cyperus alternifolius and Coix Aquatica Roxb Grown in Constructed Wetland. Zhiqiang Li*, Stili Li, hailand Huang, bing He, minghua Gu, Zhenli He and Xiao Yang

9:15 AM Break.

349-6 9:30 AM Household Food Discards and Implications. Zhengxia Dou*, John D. Toth, Dave Galligan and James Ferguson


349-9 10:15 AM Environmental Benefits of the Shea Butter Tree in West Africa’s Agroforestry Parklands. Ramachandran P.K. Nair* and Peter Lovett

349-10 10:30 AM Spring Seedbed Characteristics After Winter-killed Cover Crops. Natalie Lounsbery* and Raymond R. Well


11:00 AM Adjourn.

SESSION NO. 350

Sources and Rates of Greenhouse Gas Emissions From Agriculture

ASA Section: Environmental Quality

Lead Community: Soil Carbon and Greenhouse Gas Emissions

TCC, Room 15, First Floor

President: Jalal D. Jabro

7:55 AM–12:00 PM

7:55 AM Introductory Remarks.

350-1 8:00 AM How Much Nitrous Oxide Comes From Nitrification Under Different Conditions. Rui Liu*, Deli Chen, Helen Charlotte Suter and Helen Hayden


350-4 8:45 AM Life-Cycle Assessment of Greenhouse Gases Affected By Irrigation, Tillage, Crop Rotation, and Nitrogen Fertilization. Upendra M. Saiju*, William B. Stevens and TheCan Caesar-TonThat


350-7 9:30 AM Net Greenhouse Gas Emissions From Paddy Fields As Affected By Rice Straw Incorporation Under Two Water Regimes. Jianlin Shen*, Sr, Hong Tang, Jieyun Liu, Cong Wang, Yong Li and Jinshui Wu

350-8 9:45 AM Linking Soil Profile Greenhouse Gas Concentrations to Surface Emissions in a Prairie Pothole Agricultural Landscape. Xiaopeng Gao*, Nandakumar Rajendran, Mario Tenuta, Aidedeji Dunmola and David L. Burton

10:00 AM Break.


350-10:10:30 AM Summer Time Nitrous Oxide Emissions From Long Term Plots Receiving Separated and Whole Dairy Slurry Manure. Derek Hunt*, Shabtai Bitman and C. Grant Kowalenko

350-11:10:45 AM Measurement of N2O and CH4 Soil Fluxes From Garden, Agricultural and Natural Soils Using Both Closed and Open Chamber Systems Coupled With High-Resolution Crds Analyzer. Nabil Saad*, Yonggang He, Christopher Alexander, Gloria Ann Jacobson, Dereck Fleck, John Hoffnagle, Bernardo del Campo and Chris Rella


350-15:11:45 AM Improving Synchrony of Nitrogen Turnover and Crop Demand Through Zonal Management. Daniel Kane*, Sieglinde S. Snapp and Adam Davis

12:00 PM Adjourn.

SESSION NO. 351

General Biochar: Agronomic and Environmental Uses: II

ASA Section: Environmental Quality
Lead Community: Biochar: Agronomic and Environmental Uses
TCC, Room 14, First Floor
Presider: Kurt A. Spokas
8:00 AM–10:55 AM
8:00 AM Introductory Remarks.

351-1 8:05 AM Greenhouse Gas Emission and Groundwater Pollution Potentials of Soils Amended With Different Swine Biochars. Kyoung S Ro*, Jeffrey M. Novak, Kurt A. Spokas, Mark Johnson and Nicole Berge


351-3 8:35 AM Anion Exchange Capacity of Biochar. Michael Lawrinenko* and David A. Laird

8:50 AM Break.

351-4 9:00 AM Efficacy of Designer Biochars in Modifying Water Infiltration Rates Through An E Horizon of a Typic Kandiudult. Jeffrey M. Novak*, Gilbert C. Siguia, Donald W. Watts, Keri B Cantrell and Mark G. Johnson


9:45 AM Break.

351-7 9:55 AM Use of Chemical and Physical Characteristics to Investigate Trends in Biochar Feedstocks. Fungai N.D. Mukome, Xiaoming Zhang, Lucas Silva, Johan Six and Sanjai J. Parikh*

351-8 10:10 AM Stability of Biochar Series in Soils and Induced Priming Effects. Daniel P. Rasse*, Alice Budai, Alessandra Lagomarsino and Xingzh Ma


10:40 AM Discussion.

10:50 AM Concluding Remarks.

10:55 AM Adjourn.

SESSION NO. 352

Biochar: Agronomic and Environmental Uses Community Business Meeting

ASA Section: Environmental Quality
Lead Community: Biochar: Agronomic and Environmental Uses
TCC, Room 14, First Floor
Presider: Kurt A. Spokas
10:55 AM–11:55 AM
10:55 AM Introductory Remarks.

11:00 AM Community Business Meeting.

11:30 AM Presentation of Community Awards.

11:35 AM Highlights from Community Posters.

11:40 AM Discussion.

11:55 AM Adjourn.
SESSION NO. 353

Long-Term Trials and Modeling To Estimate Soil Carbon Dynamics and Greenhouse Gas Flux

ASA Section: Environmental Quality
Lead Community: Soil Carbon and Greenhouse Gas Emissions
Section or Division Cosponsors: Climatology & Modeling, Soil & Water Management & Conservation
Community Cosponsors: Global Climate Change Community, Model Applications in Field Research Community

TCC, Room 15, First Floor
Presider: Shabtai Bittman
12:55 PM–2:00 PM

12:55 PM Introductory Remarks.

353-1 1:00 PM A Decade of Continuous Greenhouse Gas Exchange Measurements and Soil Carbon Monitoring At Two Temperate Grassland Sites. Jens Leifeld*, Christof Ammann, Albrecht Nefelt, Xiaojuan Feng and Juerg Fuhrer


353-4 1:45 PM Simulation of N2O Emissions and Mitigation Options for Rainfed Wheat Cropping On a Vertosol in Southern Queensland. Yong Li*, Weijin Wang and Ram Dalal

2:00 PM Adjourn.

SESSION NO. 354

Biochar Effects On Soil Nutrients, Plant Growth and Agronomic Yields

ASA Section: Environmental Quality
Lead Community: Biochar: Agronomic and Environmental Uses
TCC, Room 14, First Floor
Presiders: Jeffrey M. Novak; Kurt A. Spokas
1:00 PM–3:50 PM

1:00 PM Introductory Remarks.

354-1 1:05 PM The Characteristics Of Biochars Pyrolyzed From Different Feedstocks and Their Amelioration Effects On Acid Soils. Zhongmin Dai, Philip Brookes and Jianming Xu*

354-2 1:20 PM Biochar Ability to Provide and Retain Nutrients in a Kentucky Blue Grass System. Angela M. Ebeling*, Aubrey Rockman, Andrew Armstrong, Daniel Carey and Daniel Zitomer


2:05 PM Break.

SESSION NO. 355 — ENVIRONMENTAL QUALITY

Symposium—Phosphorus Fate, Management, and Modeling in Artificially Drained Systems: II

ASA Section: Environmental Quality
Section or Division Cosponsors: Soil & Water Management & Conservation, Soils & Environmental Quality
Community Cosponsor: Nutrients and Environmental Quality
TCC, Room 16, First Floor
Presider: Carl H. Bolster
1:25 PM–3:20 PM

1:25 PM Introductory Remarks.


355-3 2:00 PM Phosphorus Movement Through Macropores: Are Current Models Relevant to a P Index? D. Keith Reid*, Kevin King and Tiequan Zhang

355-4 2:15 PM Quantifying Subsurface Hydrology Effects On Chemical Transport in Drainage Ditches Using a 20-Meter Flume. Colton Yoder*


355-6 2:45 PM Modeling Phosphorus Transfer From Fields To Artificial Drainage Networks. Zachary Easton*, Amy Collick and Daniel Fuka

3:00 PM Discussion.

3:20 PM Adjourn.
SESSION NO. 356
By-Product Gypsum: Beneficial Uses in Agriculture: II

ASA Section: Environmental Quality
Lead Community: By-product Gypsum Uses in Agriculture
Community Cosponsor: Adaptive Nutrient Management Community

TCC, East Hall, Third Floor
Presider: Arthur L. Allen
2:30 PM–4:30 PM


356-4 1118 Reclamation of Calcareous Saline Sodic Soil Properties and Improvement of Wheat Growth Using Different Industrial By-products, Chemical, and Organic Amendments. Emad Aboukila*

356-5 1119 Using Gypsum to Reduce Tuber Rot and Increase Potato Yields On Sandy Loam Soils. Mark S. Reiter* and Steve Rideout

SESSION NO. 357
Environmental Quality General Session: II

ASA Section: Environmental Quality
TCC, East Hall, Third Floor
2:30 PM–4:30 PM

357-1 1200 Fate of Carbon Around Excreta Patches. Ana B. Wingeyer, Martha Mamo*, John A. Guretzky, Pamela J Sutton, Walter Schacht and Jerry Volesky

357-2 1201 Late Summer Planted High Glucosinolate Mustard Cover Crops to Reduce Soil Borne Pathogens. John M. Jemison* Jr.

357-3 1202 Arsenic and Cooper Contents in Tropical Soils and Human Health Risk Assessment. Evandro Barbosa da Silva* and Luis Reynaldo Ferracciule Alleoni

357-4 1203 Ecological and Genetic Assessment of Reclaimed Sites in a Metal Contaminated Region (Northern Ontario, Canada). Ramya Narendrula* and Kabwe K. Nkongolo

357-5 1204 Evaluation Of Concentrations Of Volatile Organic Hydrocarbons On Air Quality In Some Petrol Stations In Tehran, Iran. Samira Sadeghzade*, Mohamad Sadegh Sekhavatjou and Abdolreza Karbassi


SESSION NO. 358
Greenhouse Gas Emission Methodology and Analyses

ASA Section: Environmental Quality
Lead Community: Soil Carbon and Greenhouse Gas Emissions
TCC, East Hall, Third Floor
2:30 PM–4:30 PM

358-1 1210 Life Cycle Analysis of Com Harvest Strategies. Juan Gao*, Kurt D. Thelen and Xinmei Hao


358-6 1215 How Many Samples Are Needed to Estimate the Annual N2O Flux From Soils? Debashis Saha*, Armen R. Kemanian, Paul R. Adler, Benjamin M Rau, Felipe Montes and Jason P. Kaye


SESSION NO. 359

Long-Term Studies On Soil Carbon and Greenhouse Gas Emissions

ASA Section: Environmental Quality
Lead Community: Soil Carbon and Greenhouse Gas Emissions
Section or Division Cosponsor: Soil & Water Manage. & Conser/C
Community Cosponsors: Global Climate Change Community, Model Applications in Field Research Community

TCC, East Hall, Third Floor

SESSION NO. 360 — GLOBAL AGRONOMY

Symposium—Smallholder Farming Systems and Extension Education Opportunities

ASA Section: Global Agronomy
Lead Community: Gaining Access to Agronomic Inputs Community
Community Cosponsor: Field Diagnosis for Smallholder Agriculture

TCC, Room 3 and 4, First Floor
Presider: Darin Wayne Lickfeldt
8:00 AM–11:30 AM
8:00 AM Introductory Remarks.
360-1 8:00 AM The Brown Revolution: A Sustainable Response to the Global Food Crisis and Viable Options for the Small Scale Farmer. Stan Doerr*

360-2 8:30 AM Delivery of Sustainable Extension Services Through Private Input Retailers. Patrick Norrell*

360-3 9:00 AM Innovative Approaches to Plant Health and Extension for Smallholders: Plantwise and Beyond. Patricia Neenan*, Dannie Romney, Sharbendu Banerjee and George Oduor

360-4 9:30 AM Precision Agriculture For Small Scale Farming Systems. Raj Khosla*

360-5 10:00 AM Growing People From the Ground Up: Lessons Learned From Working With Smallholder Families in the Developing World. Alan Silva*

360-6 10:30 AM Extension Education Opportunities for Smallholders in India and Africa Through the Introduction of Drip Irrigation. Naty Barak*

11:00 AM Discussion.
11:30 AM Adjourn.

SESSION NO. 361
General Gaining Access To Agronomic Inputs
ASA Section: Global Agronomy
Lead Community: Gaining Access to Agronomic Inputs Community
TCC, East Hall, Third Floor
1:00 PM–2:30 PM

361-1 Remote Satellite Images Reveal Farming and Irrigation Patterns On Ancient Chinese Bronzes. Bruce Jones*

361-2 1318 Identifying Novel Traits to Enhance Biomass and Nitrogen-Use Efficiency (NUE) in a Wide Wheat Germplasm. Oorbessy Gaju*

361-3 1319 Optimizing a Cyanobacterial Bio-Fertilizer Manufacturing System for Village-Level Production in Ethiopia. Mekiso Yohannes, Girma Wolde, Mulat Asmamaw, Solomon Yigrem, Heather Storteboom, Endalkachew Wolde-meskel, Alemayehu Chala and Jessica G. Davis*

361-4 1320 A Conservation Agriculture Production System Program for the Central Plateau of Haiti. Thomas L. Thompson and Wade E. Thomason*


361-6 1322 Physiological Quality and Gene Expression During the Development of Seed Habanero Pepper (Capsicum chinense Jacquin.). Heloisa Oliveira Santos, Edila Vilela De Resende Von Pinho, Iolanda Vilela Von Pinho*, Renzo Garcia Von Pinho and Thais Andrade

361-7 1323 Genetic Control of Maize Hybrid Performance Using Complex Pedigrees and Micro-satellite Markers. Renzo Garcia Von Pinho*, Marcio Balestre and Wagner Mateus Costa Melo


361-9 1401 What Genetically Modified Soybeans Could Mean to Cambodia. Christina Joy Dittmer*

361-10 1402 Technology Transfer for Semi-Arid Production in Eastern and Northern Uganda. Charles S. Wortmann*, Kayuki Crammer Kaizzi, Angela kasozi and Gabriel Elepu


361-13 1405 Chinese Maize Production – The Critical Need For Technology. Ning Cao, Hongyu Pan, Jinliang Liu, Robert E. Dunker* and Don Bullock

361-14 1406 Brazilian Production. Rogerio Carlos Traballi*, Irae Amaral Guerrini, Alexandre Cavalcante De Queiroz, Carlos Roberto Ramos Da Silva, Juliana Duarte Leandro and Amanda Gaspar Monteiro Traballi

SESSION NO. 362
General Agricultural Experiment Station Management: I (includes graduate student competition)
ASA Section: Land Management & Conservation
Lead Community: Agricultural Experiment Station Management
TCC, Room 19, First Floor
8:30 AM–9:50 AM
8:30 AM Introductory Remarks.


362-2 8:50 AM Development of An Operating Policy At the Regional Purdue Agricultural Centers... Exceeding Researcher and Other Clientele Expectations in Economically Challenging Times. Jerry J. Fankhauser* Jr., Stephen E. Hawkins and Jay Young

362-3 9:05 AM Organic Land Management Improves Soil Stewardship and Human Nutrition. Il Hagsten*


9:50 AM Adjourn.
SESSION NO. 363
Land Management and Conservation Section Business Meeting
ASA Section: Land Management & Conservation
Lead Community: Agricultural Experiment Station Management
TCC, Room 19, First Floor
Presider: Charles E. Wilson Jr.
10:00 AM–11:00 AM

SESSION NO. 364
Agricultural Experiment Station Management Community Business Meeting
ASA Section: Land Management & Conservation
Lead Community: Agricultural Experiment Station Management
TCC, Room 19, First Floor
Presider: Charles E. Wilson Jr.
11:00 AM–12:00 PM

SESSION NO. 365
Military Land Use and Management Community Business Meeting
ASA Section: Land Management & Conservation
Lead Community: Military Land Use and Management Community
TCC, Room 9, First Floor
Presider: Dick L. Gebhart
11:10 AM–12:10 PM

SESSION NO. 366
Symposium—Yield Gains through Genetics and Breeding
C01 Crop Breeding & Genetics
Section or Division Cosponsors: C03 Crop Ecology, Management & Quality, C07 Genomics, Molecular Genetics & Biotechnology
TCC, Ballroom B-D, First Floor
Presider: Jim Gaffney
10:00 AM Introductory Remarks.
366-1 10:05 AM Genetic Contributions to Yield of Maize in the US Central Corn Belt 1930-2011. Stephen Smith*

SESSION NO. 367
CSSA Breakfast, Awards, and Plenary (Betty Klepper Endowed Lectureship)
Keynote/Plenary Sessions
Marriott Waterside, Grand Ballroom E and F, Second Level
Presiders: Mark A. Brick; Jeffrey J. Volenec
7:30 AM–9:30 AM
7:30 AM Breakfast.
8:00 AM Awards.
8:40 AM Introductory Remarks.
308-1 8:45 AM Global Food Security in the 21st Century: Challenges and Opportunities for Crop Scientists. Bir B. Singh*
9:30 AM Adjourn.

SESSION NO. 368
General Crop Breeding and Genetics: II
C01 Crop Breeding & Genetics
TCC, East Hall, Third Floor
2:30 PM–4:30 PM
368-39 407 Identification and Characterization Of Stem Rust Resistance In Wheat CV. Gage. Tadele Tadesse Kumssa*, Peter Baenziger, Ismail Dweikat, Robert A. Graybosch, Stephen We-gulo, Mary Guttieri, Matthew Rouse, Yue Jin and Jesse Poland
368-40 408 Drought Resistance In Sugar Cane Varieties In Mexico. Abel Munoz-Orozco*, Apolonio Valdez-Baleri, F. Carlos Gomez-Merino Sr. and Amilao Santacruz-Varela Sr.
368-42 410 The Influence of Leaf Epticicular Wax On Stomatal Conductance, Canopy Temperature, and Chlorophyll Content in Long-Term High Temperature Stressed Spring Wheat (Triti-cum aestivum). Suheb Mohammed
368-43 411 Inheritance of Wheat Streak Mosaic Virus Resistance in KS03HW12. Guorong G. Zhang* and Dallas Seifers

367-45 413 QTL For Leaf Wax Is a Precursor To Functional Staygreen Related Responses At Grain Setting , Filling and Physiological Maturity In Sorghum Under Drought and Heat Stress. Henry Awika and Dirk B. Hays

367-46 Remote Assessment Of Genetic Structure and Diversity Of Korean Wild Soybean (Glycine soja) By Hypocotyl Saponin Composition. Panneeselvam Krishnamurthy, Chigen Tsukamoto, Seung Hwan Yang and Gyuhwa Chung

367-47 Remote Function and Expression of a New 2,3-Oxidosqualene Triterpenoid Cyclase From Soybean. Mohammad M Gendy, Gyuhwa Chung, Walaa A Mohamad, Chigen Tsukamoto and Seung Hwan Yang


367-50 416 Development of Brown Midrib Sweet Sorghum As a Biomass Crop for Ethanol Production. Luís Armando Rivera Burgos, Sr. and Gébisa Ejeta

367-51 417 Effect of Temperature During Grain Filling on the Amylose/Starch Ratio in Maize Hybrids With Different Kernel Hardness. Roberto Dionisio Martinez, Anibal Cerrudo, Fernando Andrade, Alfredo Cirilo, Juan Pablo Monzón and Natalia I Engineer

367-52 418 Source-Sink Balance in Two Current Argentinian Maize Hybrids. Lia Olmedo Pico, Anibal Cerrudo, Fernando Aramburu Merlos, Luis Erazzu and Fernando Andrade

367-53 419 Genetic Variation in Ethanol Yield of Lowland Switchgrass. Jessica N. Hentchel and Hem S. Bhandari

367-54 420 Breeding for Root Lesion Nematode Resistance In Montana Winter Wheat. David May

367-55 421 Reproductive Plasticity Strategies: Flex Ear Vs. Prolificacy. Anibal Cerrudo, Javier Antonio Di Matteo and Fernando Andrade

367-56 422 Heritability Studies of Late Leaf Spot Resistance in Valentina Type Groundnut Varieties. Wambi Wilber, Phinehas Tukumahwaba, Naveen Puppala, Sivananda Varma Tirumalaraju, Okello David Kalule, Boris Bravo Ureta and Carl M Deom

367-57 423 QTL Mapping For Soybean Sudden Death Syndrome (SDS) And Cyst Nematode (SCN) On a ‘hartwig x ‘camp’ Population. Victor Hugo Nakase Otsubo, Shi Sun, Qibin Ma and Pengyin Chen

367-58 500 Wildrice (Zizania palustris) Varietal Differences in Response To Timing Of Harvest. Raymond A. Porter and Daniel Braaten


367-60 502 SNP Markers for Identification and Differentiation of rhg1 Alleles for Soybean Cyst Nematode (SCN) Resistance In Soybean. Aimong Shi, Pengyin Chen and Senyu Chen


367-62 504 Genetic Erosion in a Synthetic Variety Derived From Single Crosses. Jaime Sahagún-Castellanos, Jose Luis Escalante-González, Juan Enrique Rodríguez-Pérez and Aureliano Peña-Lomeli


367-64 506 Establishment of a Regeneration System By Callus Induction From Seeds of Prairie Cordgrass. EunSoo Seong, A. Lane Rayburn, Moonsub Lee, Sumin kim and Dokyoung Lee


367-67 508 Chromosome Doubling of Prairie Cordgrass. Moonsub Lee, Dokyoung Lee, Sumin kim and A. Lane Rayburn

367-68 509 Genomic Selection For Pre-Harvest Sprouting Tolerance In Winter Wheat. Jessica K. Cooper, Scott D. Haley, Eric Storlie and Jesse Poland


367-72 513 Potential for Genetic Improvement of Resistance to Anthracnose in Switchgrass. Hilary Mayton*, Laura Cortese, Eric Weibel and Stacy A. Bonos

367-73 514 Comparative Assessment of Greenbug Resistance Loci in Sorghum. Somashekar Punnuri* and Yinghua Huang


367-75 516 Identification of Markers Associated With Barley Yellow Dwarf Virus Tolerance in Spring Oat and Their Utilization in Predictive Breeding. Bradley J. Foresman, Rebekah Oliver, Eric Jackson, Shiaoman Chao and Frederic L. Kolb*

367-76 517 Mapping Agronomic Performance in Malling barley Using a Narrow Cross. Jose A Rivera*, Magan Lynn Lewis, Fabio Pedraza, Rongshuang Lin, Paul B. Schwarz and Richard D. Horsley

367-77 518 Genetic Instability of a Conventional Synthetic Variety. Jaime Salagún-Castellanos*, Jose Luis Escalante-González, Juan Enrique Rodríguez-Pérez and Aureliano Peña-Lomelí

367-78 519 A Comparison Between Genotyping-By-Sequenceing and Array-Based Scoring Of SNPs For Genomic Prediction Accuracy In Winter Wheat. Ibrahim El-basyoni*, Mary Guttieri, Katherine Frels, Aaron J. Lorenz, Peter Baenziger, Jesse Poland, Eduard Akhunov and Mohamed M. Saadalla


367-80 521 Correlation and QTL Analysis of Seed Yield, Protein and Oil Content in a Recombinant Inbred Population of Soybean. Guo-liang Jiang*, Xianzhi Wang, Marci Green, Roy Scott, David L. Hyten and Perry B. Cregan

367-81 522 Changes in Kernel Number and Number of Ears Per Plant Increased Grain Yield in 15 Years (1995-2010) of Hybrid Breeding At Cimmyt. Felix San Vicente*, Ciro Sanchez, Gary N. Atlin and Samuel Trachsel


367-83 212 Fungicidal impact on production of Sea oats (Uniola paniculata L.) plants from seed. Kaitlin Barrios* and Carrie A. Knott

367-84 213 Genetic Diversity Among Soybean Genotypes Intended for Human Consumption and Cyst Nematode-Resistant to Composition Hybridizations. Lilian Cristina Andrade de Araújo, Sandra Helena Unédia-Trevisol, Viviane Formice Vianna, Fabiana Mota da Silva, Ana Cristina Pinto Juhasz and Daniel Carvalho Leite*

367-85 214 Extra-Early Maturing Cassava Varieties: Breeding Status and Progress. Bummi Olaniyi*
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>367-19</td>
<td>The Role of Leaf Epicuticular Wax in Improved Adaptation to Drought Stress.</td>
<td>Suheb Mohammed*</td>
</tr>
<tr>
<td>367-20</td>
<td>A New Popcorn Breeding Program in South Africa: Genetic Analysis of Germplasm Lines.</td>
<td>John Derera*</td>
</tr>
<tr>
<td>367-22</td>
<td>Resistance to Stalk Rots in a Sorghum Diversity Panel.</td>
<td>Adedayo Adeyauju*, Christopher Little and Tesfaye Tesse</td>
</tr>
<tr>
<td>367-23</td>
<td>Molecular Mapping of Fusarium Head Blight Resistance in Two Adapted Spring Wheat Cultivars.</td>
<td>Ahmed ElFatih ElDOI-liefy*, James A. Anderson, Karl D. Glover, Ajay Kumar, Shiaoaman Chao, Mohammed S. Alamri and Mohamed Mergoum</td>
</tr>
<tr>
<td>367-24</td>
<td>Phenotyping and Genotyping of Soybean Germplasm for Soybean Cyst Nematode (SCN) Resistance.</td>
<td>Aiong Shi*, Senyu Chen, Pengyin Chen and Baohong Guo</td>
</tr>
<tr>
<td>367-25</td>
<td>Performance of Elite Drought Tolerant Maize Varieties Tested On-Farm in Eastern and Southern Africa.</td>
<td>Peter S. Setimela*, Girma Kassie, Olaf Erenstein, John Macrobert, Cosmos Magorokosho, Amsal Tarekegne, Dan Makumbi and Osswell Ndoro</td>
</tr>
<tr>
<td>367-26</td>
<td>Estimation of Genetic Parameters Governing Resistance to Peanut Rosette Disease.</td>
<td>Nalugo Rachael Grace, James SEBU-LIBA, Sivananda Varma Tirumalaraju, Okello David Kalule, Cari Deom, Boris Bravo Ureta and Naveen Puppala*</td>
</tr>
<tr>
<td>367-27</td>
<td>Stay-Green Trait As a Tool for Wheat Breeding.</td>
<td>Henrique Souza Luche, Antonio Costa De Oliveira*, Jose Antonio Gonzalez Silva, Vandereli Rosa Caetano and Fernando Iraja Felix de Carvalho</td>
</tr>
<tr>
<td>367-30</td>
<td>Identification Of Quantitative Trait Loci (QTL) For Salt Tolerance In Soybean.</td>
<td>Ailan Zeng*, Laura Lara and Pengyin Chen</td>
</tr>
<tr>
<td>367-31</td>
<td>Comparison Of Three Different Cytoplasms In The Ogura Inra Cytoplasmic Male Sterility Pollination Control System.</td>
<td>Corey Lees*, Robert W. Duncan and Peter B.E. McVetty</td>
</tr>
<tr>
<td>367-32</td>
<td>Discovering the Genetic Architecture of Biomass Yield Components to Design a High-Yielding Biomass Sorghum for Biofuel Production.</td>
<td>Maria Salas-Fernandez*</td>
</tr>
<tr>
<td>367-33</td>
<td>Genetic Gain in Resistance to Rhizoctonia Solani and Pythium Ultimum in Upland Cotton Seedlings.</td>
<td>Whitney Minton*, C. Wayne Smith and James Starn</td>
</tr>
<tr>
<td>367-35</td>
<td>Fine-Mapping Small Effect Flowering Time QTLs in Maize: Genetic Architecture Is Complex.</td>
<td>Shilpa Sood*, Jeff Glauubit, Sara Larsson, Edward Buckler and James B. Holland</td>
</tr>
<tr>
<td>367-36</td>
<td>Combining Ability Of Wheat Genotypes Regarding Pre-Harvest Sprouting.</td>
<td>Rafael Costa de Nornberg, Antonio Costa De Oliveira*, Jose Antonio Gonzalez Silva and Luciano Costa de Maia</td>
</tr>
<tr>
<td>367-37</td>
<td>Wildrice (Zizania palustris) Varietal Differences in Response to Slow-Releasing Nitrogen Fertilizer (Polymer-Coated Urea).</td>
<td>Raymond A. Porter*, Daniel Braaten and Albert L. Sims</td>
</tr>
<tr>
<td>367-38</td>
<td>Breeding Advances In Development Of Biofortified Wheat Cultivars.</td>
<td>Velu Govindan*</td>
</tr>
</tbody>
</table>

**SESSION NO. 368**

**Water Stress and Temperature Stress**

C02 Crop Physiology and Metabolism

Marriott Waterside, Room 1, Second Level

**President:** Felix B. Fritsch

9:55 AM–12:00 PM

9:55 AM Introductory Remarks.

368-1  10:00 AM Yield and Reproductive Development of Soybean As Affected By Elevated Temperature Stress During Different Phases of the Life Cycle. | Kenneth J. Boote*, Bernard A. Hauser, Leon H. Allen Jr., Lingxiao Zhang, Emily S Wang and John Truett |

368-2  10:15 AM Can Genotypic Variability in Membrane Thermo-Stability and Chlorophyll Fluorescence Be Used to Improve Heat Tolerance in Wheat? | C. Mariano Cossani* and Matthew P. Reynolds |

368-3  10:30 AM Traits That Differentiate Drought Tolerant and Susceptible Genotypes Of Cassava: Growth Partitioning, Reserve Carbohydrates, Abscisic Acid and Leaf Water Loss. | Luis Duque* and Tim L. Setter |


368-5  11:00 AM Effects of High Night Temperature and 1-Methylocyclopentene (1-MCP) On Rice Leaf Photosynthetic Rate, Respiration, Pollen Viability and Yield. | Abdul R. Mohammed* and Lee Tarpley |

368-6  11:15 AM Understanding Abiotic Stress Tolerance Mechanisms in Soybean (Glycine max.): Physiological, Biochemical and Cellular Responses to Drought and Flooding Stress. | Raymond N Mutava*, Henry T Nguyen, Silvas Prince and Syed Naeem |

**SESSION NO. 369**

**General Crop Physiology and Metabolism: I**

**C02 Crop Physiology and Metabolism**

TCC, Room 9, First Floor

*Presider: Gregory S. McMaster*

12:55 PM *Introductory Remarks.*

369-1 1:00 PM **Feeding a Growing Population in Subtropics and Tropics With Maize Planted At a Higher Population Density.** Samuel Trachsel, Biswanath Das, Ciro Sanchez, Gary N Atlin and Felix San Vicente

369-2 1:15 PM **Identifying Physiological Gains in the Historic Midwest Soybean Germplasm.** Robert P. Koester*, Jeffery A. Skoneczka, Brian W. Diers and Elizabeth A. Ainsworth

369-3 1:30 PM **Artificial Alkalizing Drought Signals As Potential Growth Retardants.** Peter S. Kettlewell*, Anna K.S. Aronsson, Ivan G. Grove, John P.H. Reade, Annis Richardson, Michael W. Snelson and Alice E. Whitehead

1:45 PM *Break.*

369-4 2:00 PM **Tractor Based Precision Phenotyping of Diverse Rice Populations in the Field.** Stephen P Klassen*, Jan E Leach, Hei Leung, John Mckay and Michael Dingkuhn


369-6 2:30 PM **Beyond The Cellulose: Quantifying Plant To Ecosystem Level Water Balance Using Isotopic Composition Of Plant Lipids.** Lucas Silva*, Timothy A. Doane, Gabriel Pedroso and William R. Horwath

369-7 2:45 PM **Bacterial Endophytes Living in Intercellular Spaces of Leaves Lower Leaf Water Potential of Rice (Oryza sativa) Plants.** Hyungmin Tony Rho*, Johann Cantillo, Shyam Kandel, Evan Henrich, Sharon Lafferty Doty and Soo-Hyun Kim

3:00 PM *Adjourn.*

**SESSION NO. 370**

**General Crop Physiology and Metabolism: II**

**C02 Crop Physiology and Metabolism**

TCC, East Hall, Third Floor

*Presider: Gregory S. McMaster*

1:30 PM–3:30 PM

370-1 600 **Winter Survival of Canola At Different Growth Stages.** Emma L Gantz* Jr. and Mi- chael J. Stamm

370-4 603 **Calcium May Help Decrease Rice Straight-head in a Silt Loam Soil.** Wei Zhou, Hai-zheng Xiong, Wengui Yan*, Sixte Ntamatun- giro and Bihu Huang

370-2 601 **Twin Rows Planting System Does Not Alter Rue.** Nicolas Vera and Oscar Valentinuz*

370-3 602 **Effects of Bisphenol A On Germination of Soybean Seeds.** Anna Benton*

370-5 604 **Photosynthesis of Irrigated Soybean Grown Using the Early Production System.** H. Ar- nold Bruns*

370-6 605 **Variation Of Leaf Gas Exchange Capacity and Morphological Characters Of Leaf In Soybean [Glycine Max (L.) Merr.] Recom- binant Inbred Lines.** Yasuko Fukuda*, Yu Tanaka, Kenichiro Fujii, Keisuke Katsura, Tetsuya Nakazaki and Tatsuhiko Shiraiwa

370-7 606 **Root Elongation Among Diverse Soybean Genotypes.** Kasey Hames* and Felix B. Fritschi

370-8 607 **Rooting of Jatropha Curcas Cutting Types Under Different Substrates.** Renata Capistran- rano Moreira Furlani*, Luiz de Souza Corrêa, Enes Furlani Jr., Gustavo Alves Pereira, Samuel Ferrari and Danilo Marcelo Aires dos Santos

370-9 608 **Effect of Soil Temperature On Root and Shoot Biomass Partitioning in Maize.** Camer- on L. Horine, Michael Joseph Frank* and Felix B. Fritschi

370-10 609 **Source Limitation Affects Partitioning To Grain and Stem Sugar In a Photoperiod Insensitive Sweet Sorghum.** John E. Erick- son*, Maninderpal Singh and Jeffrey Robert Fedenko

370-11 610 **Genetic Gains for Physiological Traits Associated With Yield in Soft Red Winter Wheat in the Eastern United States From 1919 to 2009.** Maria Balota*, Andrew J Green, Carl A. Griffey, Robert Pitman and Wade E. Thomas- son

370-12 611 **Determining Winter Wheat Phenological Parameters for Phenologyms, a Simple Model to Predict Phenology.** Gregory S. Mcmaster*, Marc Moragues, Scott D. Haley, Patrick Byrne, Jerry J. Johnston and Gerald Buchleiter

370-13 612 **High-Throughput Phenotyping of the Leaf Transpiration At the Primary Leaf in Soy- bean [Glycine Max. (L.) Merr.], Yu Tanaka*, Yasuko Fukuda and Tatsuhiko Shiraiwa

370-14 613 **Pre-Treatment of Rice Seedlings With 1– Methylcyclopropene (1-MCP) Increases Plant Stand and Tiller Number in Trans- planted Rice.** Abdul R. Mohammed* and Lee Tarpley

370-15 614 **Enhanced Rice Growth Is Confirmed By Increased Leaf ADP-Glucose Pyrophospho- rylase Activity.** Alanna Schlosser*, Petrae Hofer, John M. Martin, Brian Beecher and Michael J. Giroux

**SESSION NO. 371 — DIV. C02**

**Div. C02 Crop Physiology and Metabolism Business Meeting**

**C02 Crop Physiology and Metabolism**

TCC, Room 9, First Floor

*Presider: Hugh J. Earl*

3:45 PM–4:30 PM
SESSION NO. 372
Div. C03 Crop Ecology, Management and Quality Business Meeting

C03 Crop Ecology, Management & Quality
TCC, Room 33, Third Floor
1:00 PM–2:30 PM
Division Business Meeting.
2:30 PM Adjourn.

SESSION NO. 373
Crop Ecology, Management and Quality Posters: II

C03 Crop Ecology, Management & Quality
TCC, East Hall, Third Floor
2:30 PM–4:30 PM

373-1  615 Simulation of Post-Anthesis Drought Effect On Sorghum Using Chemical Desiccants. Patrick Obia Ongom* and Gebisa Ejeta


373-3  617 Optimal Fall Harvest Time for Production of High-Quality Switchgrass Grown For Combustion. Amir Sadeghpour*, Masoud Hashemi, Sarah A. Weis and Stephen J. Herbert

373-4  618 Assessing Various Seedbed Preparations On Switchgrass Establishment and Production. Amir Sadeghpour*, Masoud Hashemi, Emad Jahanzad, Leryn E. Gorlitsky, Michelle DaCosta and Stephen J. Herbert

373-5  619 Application of Soil Conditioners Can Improve Root Growth, Increase Nutrient Uptake, and Potato Tuber Yield. Samuel Y.C. Essah*

373-6  620 Sugarcane Genotype Response to Flooding Soon After Planting and Ratooning. Barry Glaz*

373-7  621 Seeding Date Influence On New Pulses In North Dakota. Kuhu Sahu, Burton L. Johnson* and Richard Eggem

373-8  622 Progress Towards a 2,4-D Tolerant Red Clover (Trifolium pratense). Tara Leigh Burke*, James Roberts, Norman Taylor and Michael Barrett

373-9  623 Theoretical Ethanol Yield for Potential Bioenergy Sorghum Genotypes of Differing Compositions. Monique K Long*, Jeffrey J. Volencel and Sylvie M. Brouder

373-10 Remote Yield and Yield Components Variability of Grain Sorghum Genotypes. Fatemeh etemadi and Masoud Hashemi*


SESSION NO. 374
Div. C05 Turfgrass Science Business Meeting

C05 Turfgrass Science
Marriott Waterside, Grand Ballroom E and F, Second Level
Presider: Erik H. Ervin
10:00 AM–11:30 AM

SESSION NO. 375
Turfgrass Breeding and Genetics

C05 Turfgrass Science
TCC, Room 25, First Floor
Presider: Susana R. Milla-Lewis
12:55 PM–2:30 PM

12:55 PM Introductory Remarks.

375-1  1:00 PM Manipulating the Chromosome Number of Zoysiagrass. Brian M. Schwartz*, Ryan N. Contreras, Wayne W. Hanna and Scott A. Jackson

375-2  1:15 PM DNA Fingerprinting of Kentucky Bluegrass Cultivars and Hybrids. B. Shaun Bushman*, Paul G. Johnson, Joseph G. Robins, Scott E. Warnke and Keenan Amundsen

375-3  1:15 PM Manipulating the Chromosome Number of Zoysiagrass. Brian M. Schwartz*, Ryan N. Contreras, Wayne W. Hanna and Scott A. Jackson


375-5  1:45 PM All This Turf Sequence Data, Now What? Keenan Amundsen*

375-6  2:00 PM The Reproductive Biology of Danthonia Spicata. Scott E. Warnke*, Keenan Amundsen and Azzar M. Hossain

375-7  2:15 PM Clonal Evaluation of Hilaria Belangeri for Turf Domestication. Mohammad Pessarakli and David M. Kopeck*
SESSION NO. 376
Symposium—What’s in a Name? Majors, Courses and Careers for the Undergraduate Turfgrass Management Student
C05 Turfgrass Science
Section or Division Cosponsor: Education & Extension
TCC, Room 24, First Floor
Presider: Cale A. Bigelow
12:55 PM Introductory Remarks.
376-1 1:00 PM What’s In A Name: The State Of Turf Science and Management Plans Of Study. Cale A. Bigelow* and Elizabeth A. Guertal
376-2 1:15 PM Turfgrass Curriculum – Perspective From a Dean. Marcos Fernandez*
376-3 1:30 PM Industry Expectations for Turfgrass Graduates. Robert C. Golembiewski*
376-4 1:45 PM Recruiting and Building a Turfgrass Program - Faculty Perspectives. Christian M. Baldwin*
2:15 PM Discussion - What has Worked with your Turfgrass Curriculum?
2:30 PM Concluding Remarks.
2:35 PM Adjourn.

SESSION NO. 377
Turfgrass Breeding, Cultural Practices, and Environment
C05 Turfgrass Science
TCC, East Hall, Third Floor
2:30 PM—4:30 PM
377-1 708 Phenotypic and Genotypic Differences Between Bahiagrass Hybrids in Georgia. Gerald M. Henry*, Karen Harris-Shultz, Jared A Hoyle, Chase M Straw, Kevin Tucker and Robin Landry
377-2 709 Foliar and Granular Nitrogen for Creeping Bentgrass. L. Patrick Conard* and Elizabeth A. Guertal
377-3 710 Evaluation of South African Bermudagrass Germplasm for Shade Tolerance. Jeffrey C Dunne, W Casey Reynolds, Grady L Miller, Consuelo Arellano, Rick Brandenburg, At Schoeman, Fred Yelverton and Susana R. Milla-Lewis*
377-4 711 Less Frequent Irrigation Increases Rooting Depth of Some Warm–Season Turfgrasses During Establishment. Jason Kruse*, Sarah E. Cathey, Thomas R. Sinclair and Michael D. Dukes
377-5 712 Evaluation of Species for Rapid Establishment On Mississippi Roadside. Timothy Bradford* Jr., Barry R. Stewart, Gregg C. Munshaw and Herbert W. Philley
377-6 713 Irrigation With Tailored Water: Nitrogen Leachate. Elena Sevostianova* and Bernd Leinauer
377-8 715 Warm–Season Turfgrass Establishment From Seed When Seeded Dormant and Irrigated Though Subsurface Drip Irrigation. Marco Schiavon*, Bernd Leinauer, James H. Baird and Matteo Serena

SESSION NO. 377 — DIV. C05

SESSION NO. 377
Symposium—What’s in a Name? Majors, Courses and Careers for the Undergraduate Turfgrass Management Student
C05 Turfgrass Science
Section or Division Cosponsor: Education & Extension
TCC, Room 24, First Floor
Presider: Cale A. Bigelow
12:55 PM Introductory Remarks.
377-1 1:00 PM What’s In A Name: The State Of Turf Science and Management Plans Of Study. Cale A. Bigelow* and Elizabeth A. Guertal
377-2 1:15 PM Turfgrass Curriculum – Perspective From a Dean. Marcos Fernandez*
377-3 1:30 PM Industry Expectations for Turfgrass Graduates. Robert C. Golembiewski*
377-4 1:45 PM Recruiting and Building a Turfgrass Program - Faculty Perspectives. Christian M. Baldwin*
2:15 PM Discussion - What has Worked with your Turfgrass Curriculum?
2:30 PM Concluding Remarks.
2:35 PM Adjourn.
<table>
<thead>
<tr>
<th>Session No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>385-4</td>
<td>Nutrient Source Affects The Vegetative Yield; Nutrient Quality and Shelf Life Of Marketable Fresh Leaves Of Amaranthus Hybridus L.</td>
<td>Sergius Obi Udengwu*, and Charles Ngene</td>
</tr>
</tbody>
</table>

**SESSION NO. 386 — NUTRIENT MANAGEMENT & SOIL & PLANT ANALYSIS**

**Secondary and Micronutrients Poster Session**

SSSA Division: Nutrient Management & Soil & Plant Analysis

Section or Division Cosponsor: Soil Fertility & Plant Nutrition

TCC, East Hall, Third Floor

2:30 PM–4:30 PM

<table>
<thead>
<tr>
<th>Poster No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>386-5</td>
<td>Zinc Fertilization of Wheat in a Low-Rainfall Area of the Inland Pacific Northwest.</td>
<td>Lawrence K. Lutcher*</td>
</tr>
<tr>
<td>386-6</td>
<td>Zinc Biofortification of Cassava Through Agronomic Management in Brazil. Ana Paula Corguinha*, Guillerme Amaral de Souza, Camila Carvalho, Eduardo Vieira, Joselino Filho and Luiz-Roberto R G Guilherme</td>
<td></td>
</tr>
<tr>
<td>386-8</td>
<td>Effect of Aluminum Doses and Sources On Roots Morphological Parameters of Upland Rice. Lucas Barbosa de Freitas*, Dirceu Maximo Fernandes Sr., Suelen Cristina Mendonca Maia and Beatriz Gallucci Mazziero</td>
<td></td>
</tr>
<tr>
<td>386-9</td>
<td>Effect of Aluminum Doses and Sources On Upland Rice Plants. Dirceu Maximo Fernandes*, Sr., Lucas Barbosa de Freitas and Suelen Cristina Mendonca Maia</td>
<td></td>
</tr>
<tr>
<td>386-10</td>
<td>Improving Crop Yield and Nutrient Use Efficiency With Premium Phosphate Fertilizers. Kirandep Kaur Mann*, Kyle W. Freeman and Mattas L. Rufio</td>
<td></td>
</tr>
</tbody>
</table>

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**SESSION NO. 384**

**Nutrient Management & Soil & Plant Analysis Business Meeting**

SSSA Division: Nutrient Management & Soil & Plant Analysis

Marriott Watersides, Grand Ballroom J, Second Level

Presider: Robert O. Miller

1:30 PM–2:30 PM

**SESSION NO. 385**

**Nutrient Management, Soil Productivity and Cropping Poster**

SSSA Division: Nutrient Management & Soil & Plant Analysis

Section or Division Cosponsor: Soil Fertility & Plant Nutrition

TCC, East Hall, Third Floor

2:30 PM–4:30 PM

<table>
<thead>
<tr>
<th>Poster No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>385-2</td>
<td>Adapting the Oregon State University Cover Crop Calculator for Southern Idaho Conditions.</td>
<td>Amber D. Moore*, Christine L. Falen, Glenn E. Shevemaker and Lauren Hunter</td>
</tr>
<tr>
<td>385-3</td>
<td>Can Soil Nutrient Accumulations be Removed Through Use of Inorganic Fertilizers and Corn Crop Production?</td>
<td>Rebecca Gilfillen*, Amneisy Netthisinghe, Paul Woosley and Karamat R Sistant</td>
</tr>
</tbody>
</table>

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**SESSION NO. 387 — NUTRIENT MANAGEMENT & SOIL & PLANT ANALYSIS**

**Business Meeting**

SSSA Division: Nutrient Management & Soil & Plant Analysis

Marriott Watersides, Grand Ballroom J, Second Level

Presider: Robert O. Miller

1:30 PM–2:30 PM
SESSION NO. 387

Soil Organic Matter and Microbial Communities – Poster

SSSA Division: Nutrient Management & Soil & Plant Analysis
TCC, East Hall, Third Floor
2:30 PM – 4:30 PM

387-1 1601 Influence of a Commercial Fertilizer and Tropic Sunn (Crotalaria juncea) As a Cover Crop On Soil Microbial Communities Under Organic Sweet Pepper Production in Puerto Rico. Ana Negrete, Veronica Acosta-Martinez, Jennifer Moore-Kucera and Elide Valencia*

387-2 1602 Comparison of Cyanobacterial Bio-Fertilizer With Urea On Two Soils and Three Crops. Mulat Asmamaw, Girma Wolde, Mekiso Yohannes, Solomon Yigrem, Endalkachew Wolde-meskel, Alemayehu Chala and Jessica G. Davis*

387-3 1603 Soil Respiration and Nitrification-Denitrification in Intercropping System. Yang Gao* Sr., Aiwang Duan Sr., Xinqiang Li, Ling Huang and xiaojun Shen

387-4 1604 Evaluation of the Susceptibility of Elite Cowpea Cultivars to Attack By Callosobruchus Maculatus, Alimatu Sadia Osunan*, Samuel ASANTE and Baffour Badu-Apraku


387-7 1607 Nitrate Reductase and Glutamine Synthetase Activity In Young Plants Of Jatropha Curcas L. Under Levels Of Shade and Nitrate Concentrations. Simone Silva Hiraki*, Enes Furlani Jr., Liliane Santos de camargos, Kuniko Iwamoto Haga, Giuseppina Pace Pereira Lima and Luis Lessi dos Reis


387-10 1610 Agronomic and Technological Characteristics of Genotypes of Sorghum Inoculated With Azospirillum Brasiliense. Luiz Gustavo Moretti de Souza, Edsonazarin* Sr., Raul Sobrinho Pivetta, Joao William Bossolani and John E. Erickson

387-11 1611 The Formation of Threshold for Wheat Production of Black Soil. Chunyu Song*, Xingyi Zhang, Yuan Chen, Tao Sun, Xiaobing Liu and Qiuying Zhang

SESSION NO. 388

Quantifying Processes to Understanding Soil Taxonomy and Land Use

SSSA Division: Pedology
Marriott Waterside, Grand Ballroom I, Second Level
7:55 AM – 9:00 AM

388-1 8:00 AM Regional Carbon and Land Use Carbon Stocks From the Rapid Assessment of Carbon Project. Skye Wills*, Larry T. West, Terry D. Loecke and Cleiton Sequeira


388-4 8:45 AM Measuring Soil Properties and Soil Change in the Wisconsin Central Sand Plain. Heather Diane Watson* and Alfred Hartemink

9:00 AM Adjourn.

SESSION NO. 389

Pedology Business Meeting

SSSA Division: Pedology
Marriott Waterside, Grand Ballroom I, Second Level
Presider: Phillip R. Owens
9:00 AM – 10:00 AM

SESSION NO. 391

General Pedology: II

SSSA Division: Pedology
TCC, East Hall, Third Floor
2:30 PM – 4:30 PM

391-1 1620 Soil Salinity Assessment Via Portable X-Ray Fluorescence Spectrometry. Samantha Swanhart*, David C. Weindorf, Autumn Acree, Noura Bakr, Yuanda Zhu, Courtney Nelson and Kayla Shook

391-2 1621 Calculating Soil Particle Density From Soil Survey Data. Cathy A. Seybold*


Pore Space and Concretion Distribution In a Prairie Mound Fragipan. Grace E. Pelton*, Brad D. Lee, Judith K. Turk and Robert C. Graham

Advanced Study In The Distribution Of Vertisols and Vertic Soils In China. Mingda Chen, Shannel Wu*, Tiao Shen and Zhongpei Li


Short Term Spodosol Soil Development As Revealed By Scanning Electron Microscopy. Robert G. Darmody*, Mark B. David, Jenwei Tsai and George Vance


Parent Materials of Alabama Blackland Prairie Vertisols. Cassi S. Jones*, Joey N. Shaw, Julie S. Howe and Ben F. Hajek


Use of VIS-NIR Spectroscopy for Mapping Specific Management Areas In Oxisols Under Sugar Cane Cultivation. Jose Marques JR.*, Livia Arantes Camargo and Gener Tadeu Pereira


Assessing the Role of Soil Chemical and Physical Characteristics On Stone Deterioration At Cultural Heritage Sites: Soft Capping of Ruins in England. Noreen D. Zaman* and Heather Viles

Predictive Soil Mapping in a Rolling Hillslope Terrain. Sam Prentice* III

SESSION NO. 392

Advances In Methods and Instrumentation To Study Soil Microbial Ecology and Organic Matter and Their Interactions: I

SSSA Division: Soil Biology & Biochemistry
TCC, Room 39, Third Floor
8:30 AM–9:50 AM
8:30 AM Introductory Remarks.

Rhizosphere Metagenomics of Biofuel Crops. Jiaron Guo*, Eliane Gomes, Caio Rachid, Aaron Garrouste, Chao Xue, Jordan Fish, Adina Howe, James Cole, C Titus Brown and James M. Tiedje


Abiotic and Physically Protected Soil Organic Matter in Long-Term Cropping Systems. Anna Cates*, Matthew D. Ruark and Janet Hedtcke


Prescribed Burning and Its Effects On the Status of Soil Organic Matter. Yuch Ping Hsieh* and Kevin Robertson

9:50 AM Adjourn.

SESSION NO. 393

Microbial Community Dynamics In Farming Systems: I

SSSA Division: Soil Biology & Biochemistry
TCC, Room 39, Third Floor
10:00 AM–12:15 PM
10:00 AM Introductory Remarks.


Brassica Soil Amendments for Soil Borne Pathogen Control in Douglas-Fir Seedlings. Bodh Paudel* and Lynne Carpenter-Boggs

Soil Carbon and Nitrogen Stabilization Within Soil Aggregates Associated With Earthworm Middens In Boreal Climate Conditions. Jatta Sheehy*, Mervi Nieminen, Johan Six and Kristiina Regina

10:50 AM Break.

Characterization and Enrichment of Microbial Cellulose Degrader Populations in Mangrove Sediments of the Arabian Gulf. Areej Alsheikh-Hussain* and Lina F. Yousef
SOIL BIOLOGY & BIOCHEMISTRY — SESSION NO. 394

395-3 1829 Greenhouse Gas Emissions From Aggregates of a Mesocosm Soil Worked By Lumbiricus Rubellus and Amythystis Agrestis. Huseyn Barı Tecimen*, Josef Gorres and Ryan Dustin Scott Melinchuk

395-4 1830 Comparison of Methods to Quantify Lignin in Plant Residues. Fritzie Rivas*, Daniel C. Olk and Michael L. Thompson

395-5 1831 Environmental Controls of Fine-Roots Decomposition Dynamics in a Northern Temperate Forest Soil. Fernanda Santos*, Knute Nadelhoffer and Jeffrey A. Bird

395-6 1832 Mulch Addition Increase Growth, Yield and Soil C and N in a Managed Full-Sun Coffee System in Hawaii. Adel Youkhana* and Travis w. idol

395-7 1833 Interpretation of Microbial Indicators As a Function of Crop Yield and Organic Carbon In Cerrado Soils. Ieda Carvalho Mendes*, Dalma Martinhao Gomes Sousa, Andre Alves de Castro Lopes, Guilherme Montandon Chaer, Fabio Bueno Reis Junior and Wenceslau J Goedert

SESSION NO. 394

General Soil Biology & Biochemistry: I

SSSA Division: Soil Biology & Biochemistry

TCC, Room 39, Third Floor

1:00 PM–2:10 PM

1:00 PM Introductory Remarks.

394-1 1:05 PM Characteristics of Organic Carbon Fractions in Base Metal Mine Tailings Amended With Woodchips With Or Without Plant Establishment. Fang You*, Ram Dalal, Xiaofang Li, David Mulligan and Longbin Huang


2:05 PM Adjourn.

SESSION NO. 395

General Soil Biology & Biochemistry: II

SSSA Division: Soil Biology & Biochemistry

TCC, East Hall, Third Floor

2:30 PM–4:30 PM


395-2 1828 Soil Chemical Properties and Arbuscular Mycorrhizal Fungi in Cerrado Revegetated Area. Márícia Helena Scabora, Rosilaine Carenhio, Katia Luciene Maltoni and Ana Maria Rodrigues Cassiolato*

395-3 1829 Greenhouse Gas Emissions From Aggregates of a Mesocosm Soil Worked By Lumbiricus Rubellus and Amythystis Agrestis. Huseyn Barı Tecimen*, Josef Gorres and Ryan Dustin Scott Melinchuk

395-4 1830 Comparison of Methods to Quantify Lignin in Plant Residues. Fritzie Rivas*, Daniel C. Olk and Michael L. Thompson

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SESSION NO. 396

Microbial Community Dynamics In Farming Systems: II

SSSA Division: Soil Biology & Biochemistry

TCC, East Hall, Third Floor

2:30 PM–4:30 PM

396-1 1834 Do Root Exudates of Specific Winter Wheat Cultivars Recruit ACC Deaminase-Positive Bacteria? Asma A. Elamari*, Tiffany Weir, Mary E. Stromberger, Charles Condon and Daniel K. Manter

396-2 Remote Effect Of Glyphosate On Symbiotic Nitrogen Fixation In Glyphosate Resistant Soybean. Lu Fan*, Yucheng Peng, David B. Weaver and Glenn R Wehtje

396-3 1835 Unique Bacteria In Century Old Untreated Or Manure Treated Wheat Soil Ecosystems. Xiufen Li*, Shiping Deng, Yan Wang, William R. Raun and Ying Teng

396-4 1836 Effect of Cover Crops and Tillage System On Nematode Community and Diversity In Soybean Production. ITO Takahiro*, ARAKI Masaaki and KOMATSUZAKI Masakazu

396-5 1837 Comparison of Microbial Diversity and Soil Respiration Among Alley Cropping, Silvopasture, Pasture, and Conventional Agricultural Systems. Sougata Bardhan*, Shiblu Joe and Christopher W Bobryk

396-6 1838 Methods for Improving PGPR Establishment. Daniel K. Manter*, Dayakar Badri and Jorge M Vivanco


396-8 1900 Effect Of Inoculation On Nodule Occupancy and Rhizobia Diversity Of Cover Crop Legumes. Sarah Seehaver*, Julie Grossman, Daniel W. Israel and Frank Louws
SESSION NO. 397

Coupled Physical-Biogeochemical Processes Shaping Element Cycling In Soils and Sediments: I

SSSA Division: Soil Chemistry
Sect or Div. Cosponsors: Soil Physics, Soil Biology & Biochemistry

397-1 8:05 AM Soil Organic C Speciation in Surface and Subsurface Soils of North-South and West-East Transects of Continental United States: Carbon K-Edge Nexafs Spectroscopic Investigation. Kang Xia*, Li Ma, Jude Moon, Mark A. Williams and David B. Smith


397-4 9:25 AM Water Table Effects On Fate of Carbon and Metals in Soil Columns. Chumki Banik*, Willie G. Harris, Andrew V. Ogram, Vimala D. Nair and Matthew J. Cohen

9:45 AM Break.


SESSION NO. 398

Arsenic Dynamics In Near-Surface Systems: I

SSSA Division: Soil Chemistry

398-1 8:05 AM Arsenic Mobility in Near-Surface Environments: Exploring the Role of Microbial Sulfate Reduction. Edward Burton*

398-2 8:30 AM Arsenic Accumulation By Edible Aquatic Macrophytes. Kim Falinski* and Russell S. Yost

398-3 8:45 AM Arsenic, Lead, and Cadmium Contamination of Crops By Fly Ash In China. Samantha C Ying*, Jianwei Bu, Ray Zhao, Guangchao C Li, Dominik Weiss, Jennifer C Wilcox, Scott Fendorf and Eric C Lambin

398-4 9:05 AM Redox Controlled Transformation of Arsenic Geochemistry in Shallow Basin-Fill Aquifer in Cache Valley, Utah: Implication of Arsenic Solubilization. Xianyu Meng* and Joan E. McLean


10:05 AM Break.

398-7 10:25 AM Assessment Of a Novel, In-Situ Remediation Technology For Immobilizing Arsenic (As) In Aerobic Soil Systems. Aaron R. Betts*, Kirk G. Scheckel and Bradley W. Miller

398-8 10:40 AM Microscale Reactivity of Arsenic On a Soil Sand Grain. Dean L. Hesterberg*, Montserrat Fuentes, Matthew Polizzotto, Joseph S. Guinnness, Ryan Tappero, Keith Jones, Chuanzhen Zhou and Eva M. Johannes

398-9 11:05 AM Defining Landforms and Rate-Limiting Biogeochemical Factors Controlling the Release of Arsenic to Groundwater Within the Mekong Delta. Jason W. Stuckey* and Scott Fendorf

398-10 11:25 AM Processes Controlling Arsenic Fate In Asian Aquifers From the Yangtze to the Mekong. Michael S. Schafert*, Xinxin Guo, Yiqun Gan, Yanxin Wang and Scott Fendorf

398-11 11:40 AM Dissolved Organic Carbon Sources and Transport and Its Role in Regulating Dissolved Arsenic Levels. Benjamin C. Bostick*, Brian Mailloux, Charles Harvey, Mason Stahl, Ivan Mihajlov, Jing Sun, Michael Berg, Steve Chilrud and Alexander van Geen

12:05 PM Concluding Remarks.
SESSION NO. 399
Symposium—Coupled Physical-Biogeochemical Processes Shaping Element Cycling In Soils and Sediments: II
SSSA Division: Soil Chemistry
Sect. or Div. Cosponsors: Soil Physics, Soil Biology & Biochemistry
TCC, Room 19, First Floor
Presiders: Benjamin Kocar; Shawn Benner
1:25 PM–3:20 PM

1.25 PM Introductory Remarks.

399-1 1:30 PM Soil Colloid Release and Stability Affected By Dom Under Different Redox Conditions. Jing Yan*

399-2 1:55 PM Kinetics of Methanogenesis: From Laboratory Experiments to Natural Environments. Qusheng Jin*, Hinsby Cadillo-Quiroz, Rongzhong Ye, Kelley Rabjohns, Scott Maguffin, Scott D. Bridgham and Brendan Bohanan

2:20 PM Break.

399-3 2:30 PM Reactive Transport Modeling of Biogeochemical Processes in Groundwater and Soils — A Tool for Data Integration and Building Conceptual Understanding. Ulrich Ulrich Mayer*

399-4 2:55 PM Hydrologic, Erosional and Biogeochemical Factors Controlling Cr Cycling in Serpentine Soils. Cynthia McClain* and Kate Maher

3:20 PM Concluding Remarks.

SESSION NO. 400
Arsenic Dynamics In Near-Surface Systems: II
SSSA Division: Soil Chemistry
TCC, East Hall, Third Floor
Presiders: Matthew Polizzotto; Jason W. Stuckey

400-1 1926 Arsenite Oxidation Coupling With Arsenate Removal in An Aerated Zero-Valent Aluminum System With Fe(II). Yu-Min Tzou* and C.E. Hwang

400-2 1927 Arsenic Accumulation and Speciation in Paddy Rice As Affected By Iron Plaque and Genotypes Grown in As-Contaminated Soils. Chien-Hui Syu, Chia-Chen Huang and Dar-Yuan Lee*

400-3 1928 Effect of Flooding and Silicon Fertilization On Arsenic in Rice Grain. William Stevens*, Matthew Rhine, James Heiser and David Dunn

400-4 1929 Governing Controls of Sulfur On Arsenic Uptake By Rice in Paddy Soil. Kristin Boye*, Dominik Weiss and Scott Fendorf

400-5 1930 Competitive Sorption of Arsenic and Phosphorus On Low and High Phosphorus Ultisols of Alabama. Mimi Roy* and Julie A. Howe

400-6 1931 Arsenic Fate Following in-Situ Sulfate Reduction: Assessing the Sustainability of a Promising Groundwater Remediation Strategy. Lara Elizabeth Pracht*, Brett Beaulieu and Rebecca B Neumann

SESSION NO. 401
Coupled Physical-Biogeochemical Processes Shaping Element Cycling In Soils and Sediments: III
SSSA Division: Soil Chemistry
Sect. or Div. Cosponsors: Soil Physics, Soil Biology & Biochemistry
TCC, East Hall, Third Floor
Presiders: Benjamin Kocar; Shawn Benner

2:30 PM–4:30 PM
401-1 1932 Bioavailable Amino Acids in Soils of North-South and West-East Transects of Continental United States. Li Ma*, Kang Xia, Mark A. Williams and David B. Smith

401-2 1933 Oxidation Of Mixed Cr-Fe Hydroxides By Birnessite. Debra Hausladen*, Samantha C Ying and Scott Fendorf

401-3 1934 Sulfur Transformation In Soil/Sediment Profiles Of Two Contrasting Basin Systems Along Louisiana Coast. Negar Tafti*, Jim J. Wang, Amitava Roy, Ronald D. DeLaune and Gregory Merchan

SESSION NO. 402
General Soil Education and Outreach: I
SSSA Division: Soil Education and Outreach
TCC, Room 13, First Floor
Presider: Monday O. Mbila
8:30 AM–9:50 AM

8:30 AM Introductory Remarks.

402-1 8:35 AM SoilWeb200 Educational Tool Goes to Ubc Wiki. Maja Krzic*, Julie Wilson, Novak Rogic and Will Engle

402-2 8:50 AM Using a Simulation Model As An Education Tool. Kenneth J. Greer* and Eric Bremer

402-3 9:05 AM Soil Science Creative Expression: It Isn't Just STEM, Making Connections Through Art and Culture. Amanda Mae Liesch*


402-5 9:35 AM Studio Soils: Integrating Student-Centered Active Learning Into An Introductory Soil Science Course. Sarah E. Andrews* and Serita D. Frey

9:50 AM Adjourn.

SESSION NO. 403
Soil Education and Outreach Business Meeting
SSSA Division: Soil Education and Outreach
TCC, Room 13, First Floor
Presider: Eric C. Brevik
10:00 AM–11:00 AM

SESSION NO. 404
General Soil Education and Outreach: II
SSSA Division: Soil Education and Outreach
TCC, East Hall, Third Floor
1:00 PM–3:00 PM

404-1 1935 Towards a Local, Sustainable Food Supply: An Innovative Curriculum for Diversified Agriculture. Rosa M. Guedes*
SESSION NO. 406 — SOIL FERTILITY & PLANT NUTRITION

Phosphorus Management

SSSA Division: Soil Fertility & Plant Nutrition

Presider: James Camerato
8:00 AM–10:20 AM

406-1  8:05 AM  Nitrogen Fertility Management For Grain Sorghum In North Carolina. Ranjit S. Riar*, P. Randall Weisz, Ronnie W. Heineger, Thierry E. Besancon and Wesley J. Everman

406-2  8:20 AM  Acidification Rate From Chemical N Fertilization and Alleviation By Manure in An 18-Year Field Experiment in a Ferralic Cambisol, South China. Zejiang CAI*, Minggang Xu, Boren WANG, Huimin ZHANG, Lu ZHANG and Suduan Gao

406-3  8:35 AM  Evaluation of Boron Produced As Seed-Core Urea for Urease Inhibition. Upendra Singh*, Job Fugicre Jr., Wendie Bible, Rick Austin and Joaquin Sanabria

406-4  8:50 AM  Longevity of NBPT Effectiveness in Agricultural Soils. John S. Kruse* and Marcus M. Alley

406-5  9:05 AM  Evaluation of N Volatilization Losses From Enhanced Efficiency Fertilizers in Rice Production. Dustin L. Harrell*

406-6  9:20 AM  Measurement, Simulation and Mitigation of Ammonia Volatilization From Intensive Agriculture. Deli Chen*, Helen Suter, Yong Li, John R. Freney and Owen Denmead

9:35 AM  Break.


406-8  10:00 AM  Novel Approach to Assessing Root Nitrogen Uptake in Rice Using 15N. Trenton L. Roberts*, Richard J. Norman, Nathan A. Slaton, Anthony M. Fulford and Chester Greub


10:20 AM  Adjourn.

SESSION NO. 405


Using Immersive Education Approaches to Communicate the Role of Soil Education in Addressing Global Challenges. Danielle M. Andrews*, Neil E. Brown, Robert G. Crane and John E. Watson

Lameira De Cima “Hortas”, An Example Of An Ancentral Sustainable Community Agricultural Use. José Nobre*, Tiago Cabral, Amadeu Neves, Carlos Pinharanddas, Ernesto Cunha and Ana Gomes

Teaching Watershed Stewardship By Using a Topographical Model of Island of Guam A Community Education Program About Protecting the Coral Reef From Upland Sedimentation Caused By Human Activities. Mohammad H. Golabi* and Sydonia Manibusan

The Use of Lecture-Capture Software to Teach Soils. Eric C. Brevik*

Innovative Media to Support Instruction and Retain Students in Soil and Environmental Sciences. April L. Ulery*, Barbara Chamberlin and Jeanne Gleason

Adaptation of Soil Judging for Cameroon. Celestine A Che, Elena A. Mikhailova*, Christopher Post, Mark A. Schlautman, Tom Owino and John M. Galbraith


The CEC Game. Jennifer Moore-Kucera* and Travis Conley

SESSION NO. 404

Phosphorus Management

Sect or Div. Cosponsor: Nutrient Manage. & Soil & Plant Analysis

SSSA Division: Soil Fertility & Plant Analysis

Presider: Olga S. Walsh
8:00 AM–11:30 AM

8:00 AM  Introductory Remarks.

404-1  8:05 AM  Effect of Tillage and Soil Phosphorus Target Level On Corn Yield. Charles A. Shapiro*, Timothy M. Shaver and Charles S. Wortmann

404-2  8:20 AM  Phosphorus Fertilization Under Different Land Preparation Methods and Performance of Groundnut (Arachis hypogea L.) in Rainforest Zone of Southern Nigeria. Joseph S. Ogeh*

404-3  8:35 AM  Distribution and Chemical Speciation of Phosphorus in Manure-Amended Saskatchewan Soils for One to Eleven Years. Gourango Kar*, Derek Peak and Jeffrey J. Schoenau

10:20 AM  Adjourn.

Phosphorus Management Trials.

Thomas Kätterer and Gunnar Börjesson

Phosphorus Management Trials.

Kwaramba Mariga and Sibongile Patience Mthombeni and Irvine Kwambamba Mariga

Improving Cotton Production Efficiency and Retain Students in Soil and Environmental Experiences to Communicate the Role of Soil Education in Addressing Global Challenges. Danielle M. Andrews*, Neil E. Brown, Robert G. Crane and John E. Watson

The Use of Lecture-Capture Software to Teach Soils. Eric C. Brevik*

Innovative Media to Support Instruction and Retain Students in Soil and Environmental Sciences. April L. Ulery*, Barbara Chamberlin and Jeanne Gleason

Adaptation of Soil Judging for Cameroon. Celestine A Che, Elena A. Mikhailova*, Christopher Post, Mark A. Schlautman, Tom Owino and John M. Galbraith


The CEC Game. Jennifer Moore-Kucera* and Travis Conley

SESSION NO. 405 — SOIL FERTILITY & PLANT NUTRITION

Nitrogen Management and Cycling

SSSA Division: Soil Fertility & Plant Nutrition

Presider: Olga S. Walsh
8:00 AM–11:30 AM

8:00 AM  Introductory Remarks.

406-1  8:05 AM  Nitrogen Fertility Management For Grain Sorghum In North Carolina. Ranjit S. Riar*, P. Randall Weisz, Ronnie W. Heineger, Thierry E. Besancon and Wesley J. Everman

406-2  8:20 AM  Acidification Rate From Chemical N Fertilization and Alleviation By Manure in An 18-Year Field Experiment in a Ferralic Cambisol, South China. Zejiang CAI*, Minggang Xu, Boren WANG, Huimin ZHANG, Lu ZHANG and Suduan Gao

406-3  8:35 AM  Evaluation of Boron Produced As Seed-Core Urea for Urease Inhibition. Upendra Singh*, Job Fugicre Jr., Wendie Bible, Rick Austin and Joaquin Sanabria

406-4  8:50 AM  Longevity of NBPT Effectiveness in Agricultural Soils. John S. Kruse* and Marcus M. Alley

406-5  9:05 AM  Evaluation of N Volatilization Losses From Enhanced Efficiency Fertilizers in Rice Production. Dustin L. Harrell*

406-6  9:20 AM  Measurement, Simulation and Mitigation of Ammonia Volatilization From Intensive Agriculture. Deli Chen*, Helen Suter, Yong Li, John R. Freney and Owen Denmead

9:35 AM  Break.


406-8  10:00 AM  Novel Approach to Assessing Root Nitrogen Uptake in Rice Using 15N. Trenton L. Roberts*, Richard J. Norman, Nathan A. Slaton, Anthony M. Fulford and Chester Greub


10:20 AM  Adjourn.
GENERAL SOIL FERTILITY & PLANT NUTRITION — SESSION NO. 407


407-11:00 AM Effect of N-Fertilizer Rates and Water Table Irrigation Management On Yield of Chipping Potatoes in Florida. Libby R Rens*, Lincoln Zottarelli, Kelly T. Morgan, Ashok K. Alva, Diane L. Rowland and Guodong Liu

407-11:30 AM Adjourn.

SESSION NO. 408

Phosphorus and Potassium Soil Fertility and Management

SSSA Division: Soil Fertility & Plant Nutrition
TCC, East Hall, Third Floor
1:00 PM–3:00 PM

408-1 2305 Effect of Mineral Fertilizers On Irrigated Winter Wheat Yield and Grain Protein Composition. Vasile Cerven* and F. G. Ceban

408-2 2306 Effects Of Potassium Fertilization In Sweet Sorghum Crop Cultivated In Tropical Conditions. Bernardo Melo Montes Nogueira Borges*, Rafael Magro Tomiccoli, Fernando Ribeiro Peixoto, Fabio Tiraboschi Leal, Andre Mendes Coutinho Neto and Edson Luiz Mendes Coutinho

408-3 2307 Nitrate and Phosphate Desorbed From Anionic Exchange Membranes Over Winter As Affected By Tillage and Fertilization. Yichao Shi*, Noura Ziadi and Roger Lalande

408-4 2308 Soil Fertility Studies With Lespedeza Cuneata. Charles C. Mitchell*, Donald M. Ball, Jorge A. Mosjedis and Joyce Tredaway Ducar

408-5 2309 Relationship Between Potassium With Calcium and Magnesium At The Initial Stage of Development of Maize Hybrid Submitted To Potassium Doses. Fernanda de Fatima Silva*, Pedro Henrique Cerqueira Luz, Liliane Maria Romualdo, Uanderson Henrique Barbieri Pateis, Gabriela Strozzi, Celso Bonaffé Peres, Valdo Rodrigues Herling and Leonardo José Lunardi

General Soil Fertility & Plant Nutrition: II

SSSA Division: Soil Fertility & Plant Nutrition
TCC, East Hall, Third Floor
1:00 PM–3:00 PM


407-2 2229 Protein Fractions of Marandu Palisadegrass Fertilized With Nitrogen Sources. Elisângela Dupas* and Salatier Büzetti

407-3 2230 Budburst Of Grape ‘niagara Rosada’ By The Use Of Erger®. Luis Lessi dos Reis*, Sarita Leonel, Simone Silva Hiraki, Aloisio Costa Sampaio, Ronny Clayton Smarsi and Vitor Hugo Artigiani Filho

407-4 2231 Mitigating Effects Of Lycopene On Growth and Productivity of Æmaranthus Hybríduus Under Aluminium Toxicity Induced Stress. Sergius Obi Udengwu* and Oliver Uchenna Egedigwe


407-7 2234 Soil Quality Changes In Response To Long-Term Pineapple Production in Costa Rica. Leslie A. Sherman*


407-9 2236 Flood Effects On Soil Fertility Along a Microtopographical Gradient. Lindsey Ruhl* and Josef Gormes

407-10 2237 Cover Crop Enhances the Benefit of Fall-Applied Poultry Litter As Cotton Fertilizer. Haile Tewolde*, Mark W. Shankle, Thomas R. Way, Ardeshir Adeli and John P Brooks

407-11 2238 Long-Term Manure Carbon Sequestration in Soil Simulated With the Daisy Model On the Basis of a Short-Term Incubation Study. Yubaraj Kumar Kariki, Christen Duus Børgesen*, Ingrid Kaag Thomsen and Peter Sørensen


407-13 2300 Quality Assessment of Fertilizers Commercialized in West Africa. Joaquin Sanabria*, Georges Dimithe and Emmanuel Alognikou

407-14 2301 Strip-Till Effects On Soil Physical Properties May Improve Corn Production Over No-Till. Brad Sørensen* and Fabian G. Fernandez


407-17 2304 Base Saturation in Function Cover Crops and Residual Doses of Limestone and Nitrogen Fertilization In No-Tillage System. Edson Lazar raini* Sr., Luiz Gustavo Moretti de Souza, Raul Sobrinho Rivetta, Naira Quirino de Biaz, Leandro Rebuá Rodrigues and Luiz Henrique Marcandalli
408-6 2310 Thermopatch: Alternative Source for Brazilian Agriculture. Ivanielle Duarte, Gaspar Kormdorfer* and Hamilton Pereira


408-9 2313 Phosphorus Availability in Calcareous Soils Amended With Organic and Inorganic Phosphorus Sources. Khalid M. Al-Kohily, Adel Ghoneim, Abdullah Saad Modaishb, Mohammad Othman Mahjoub and Mongi Zeki

408-10 2314 Impacts of Variable-Rate Potassium Fertilization On Crop Yield and Soil-Test Potassium Variability. Agustin Pagani*, Antonio P. Mallarino and David J Wittry


408-13 2317 Evaluation of PRSTM™ Probes for Monitoring Soil Nutrients in Potato Production. Eric Bremer*, Donald A. Horneck, Mario Tenuta and Oscar Molina Tirado


408-15 2319 Potassium Dynamics in Coastal Plain Soils. Charles C. Mitchell*

408-16 2320 Soil Phosphorus Distribution Under No-Till Crop Production in Southern Brazil. Leandro Bortolon*, Elisandra Solange Oliveira Bortolon and Clesio Gianello

408-17 2321 Evaluation of “Struvite” As a P Fertilizer Source For Irrigated Vegetables in the Arid Southwestern U.S. Charlie A Sanchez*, Trudy Naugler Klassen and Dan Froehlich

408-18 2322 Development of a Soil Test for Prediction of Long-Term Potential for Phosphorus Loss in Typical Canadian Soils. Aruna Herath, Tiequan Zhang*, Chin-Sheng Tan, Chantal Hamel, Shabtal Bittman, Gary W. Parkin and Michael J. Goss


408-20 2324 Phosphorus Responses to Applications of Sugarbeet Lime On Calcareous Soils in the Southwestern Desert Region USA. Aron A. Quist and Austin Ulmer*

408-21 2325 Potassium Requirements for Optimum Yield and Fruit Quality of Mature-Green Tomatoes in Florida. Monica Ozores-Hampton*, Crystal Snodgrass and Kelly T. Morgan

408-22 2326 Content and Significance of Rare Earth Elements in Phosphate Fertilizers Marketed in Brazil. Guilherme Soares Dinali, Silvio J Ramos*, Cristiano Gonçalves Moreira, Geila Santos Carvalho, José O Siqueira and Luiz-Roberto R G Guilherme

408-23 2327 Rare Earth Elements in Oxidic Soils With High Inputs of Phosphate Fertilizers. Cristiano Gonçalves Moreira, Guilherme Soares Dinali, Silvio J Ramos, Geila Santos Carvalho, José O Siqueira and Luiz-Roberto R G Guilherme*

408-24 2328 Agronomic Efficiency Of Different Types Of LIME and Sources Of Phosphorus In Brazilian Cerrado SOILS Cultivated With Soybean. Adônis Moreira*, Larissa Alexandre Cardoso Moraes, Nand Kumar Fageria and Bruna Wurr Rodak


408-26 2330 Assessment Of Biological P Cycling In Forage Soils With Varying Levels Of Available Inorganic P. Kim Schneider*, Paul R Voroney, Else K Bünemann, A. Oberson, Derek H. Lynch and Emmanuel Frossard

SESSION NO. 409

Silicon

SSSA Division: Soil Fertility & Plant Nutrition
Section or Div. Cosponsor: Nutrient Manage. & Soil & Plant Analysis
TCC, East Hall, Third Floor
1:00 PM–3:00 PM

409-1 2331 Chemical Extractants to Evaluate the Silicon Available in Soils Under Steel Slags Application. Angelica Cristina Fernandes Deus*, Leonardo Theodoroo Bull and Rafael Pieroni Catojo

409-2 2332 Steel Slag Evaluation As Silicon Source in Soybean No-Tillage System. Angelica Cristina Fernandes Deus, Leonardo Theodoroo Bull* and Rafael Pieroni Catojo

409-3 2333 Effect of the Application the Limestone and Steelmaking Slag in the Content and Accumulation of Silicon in Bermuda Grass Leaf. Mauricio Roberto de Oliveira*, Direceu Maximino Fernandes, Roberto Lyra Villas Boas, Aline Silva Sandim, Camila Abrabão, Clarice Lyne Backes, Bruno Marcos de Paula Macedo, Alessandro José Marques Santos, Thiago Gomes Pinho and Fábio Yomei Tanamati Sr.

409-4 2334 Silicon Status of Louisiana Soils Grown to Different Field Crops. Tapasya Babu*, Lawrence Datnoff, John Yzenas and Brenda Tubuna


409-6 2336 The Effects of Silicon and Fiber Composition From Canola and Wheat Residue On Soil Quality. Taylor Lynn-Marie Beard*, Kristy Borrelli, Tai McClellan Maaz, Canning Xiao and William L Pan

409-7 2337 Silicon Dynamics in Soils Under Different Cropping Systems in Louisiana. Brenda Tubuna, Tapasya Babu* and Lawrence Datnoff
SESSION NO. 410

Soil Sensing for Crop Water Management: I

SSSA Division: Soil Physics
Section or Division Cosponsor: Climatology & Modeling
Community Cosponsors: Sensor-Based Nutrient Management, Community, Agroclimatology and Agromonic Modeling Community

SSSA Division: Soil Physics

SOIL PHYSICS — SESSION NO. 410

7:55 AM Introductory Remarks.

410-1 8:00 AM Mobile Proximal Soil Sensing for Crop Productivity Assessment and Water Management. Kenneth A Suduth*, Earl D Vories, Allen L Thompson and Newell R Kitchen

410-2 8:20 AM Site-Specific Crop Management Using a Geophysical Proximal Sensor. Dennis L. Corwin*

410-3 8:40 AM Measuring Soil Moisture Using Cosmic-Ray Neutrons: Potential Use With Center-Pivot Irrigation Systems. Marek Zreda*

410-4 9:00 AM Constraining Root-Zone Soil Water Availability Using Data Assimilation and Satellite Remote Sensing. Wade Crow*

410-5 9:20 AM Mapping of Crop Water Availability By Thermal and Optical Remote Sensing. Victor Alchanatis*

9:40 AM Discussion.

410-6 9:50 AM Real-Time Model-Data Synthesis for Soil Moisture. Andres Patrignani* and Tyson E. Ochsner

410-7 10:05 AM From Soil to the Cloud: Permanent Wireless Underground Sensors for Autonomous Irrigation. Mehmet C Vuran*, Xin Dong and Suat Irmak

410-8 10:25 AM Irrigation Thresholds for Onion, Celery and Spinach in Histosols. Jean Caron*, Djamil Reikia, Guillaume Théroux Rancourt and Jonathan lafond

410-9 10:40 AM A Soil Moisture Sensor-Based Variable Rate Irrigation Scheduling System. George Vellidis*, Michael A Tucker, Calvin Perry, Herman E Henry and Rodney W Hill

11:00 AM Lunch Break.

410-10 1:00 PM Spatial Range of Representativity Complements Physical Sphere of Influence of Soil Water Content Sensor in Spatially Variable Field Soils. Ole Wendroth*, Yang Yang and Riley Jason Walton

410-11 1:15 PM In-Situ Drainage Lysimeters for Field Crops Irrigated With Brackish Water. Iael Raij*, Alon Ben-Gal and Nafali Lazarovitch

410-12 1:30 PM Didas- A New Approach and User-Friendly Software Package for Assisting Drip Irrigation Design and Scheduling. Gregory Commanar and Shmulik Friedman*

410-13 1:45 PM Dynamics of Soil Water and Nitrate in the Root-Zone Under Cover Crop and Winter Fallow Using a Combination of Soil Monitoring and Modelling. Ahmad B. Moradi*, Maziar Kandelous, Matthew R. Dumlao, Martin Burger, Wendy K. Silk and Jan W. Hopmans

2:00 PM Adjourn.
SESSION NO. 412

Soil Physics Business Meeting

SSSA Division: Soil Physics
TCC, Room 31 and 32, Third Floor
Presider: Cristine L. S. Morgan
11:00 AM–1:00 PM
11:00 AM Division Business Meeting.
12:00 PM Networking Lunch.
1:00 PM Adjourn.

SESSION NO. 413

General Soil Physics: II

SSSA Division: Soil Physics
TCC, East Hall, Third Floor
Presiders: Trine Nørgaard; Markus Flury
2:00 PM–4:00 PM

413-1 2516 A New TDR Multiplexing System for Reliable Electrical Conductivity and Soil Water Content Measurements. Lutz Weihermueler*, Johan A. Huismann, Stefanie Pickel, Norman Hermes and Harry Vereecken

413-2 2517 Moisture Effects On Visible-Near Infrared Soil Spectra - From Wet to Hyper Dry. Maria Knadel*, Fan Deng, Afsaneh Alinejadian, Lis W. de Jonge, Per Moldrup and Mogens H. Greve


413-4 2519 Soil Hydraulic Properties Determined in Evaporation Experiments With Polymer Tensiometers. Quirim de Jong van Lier* and Angelica Durigon

413-5 2520 Heat Flow in Soil Treated With Tap Water After Hot Water Treatment. Yuki Ito*, Fumiya Suzuki, Kosuke Noborio, Kazuhiro Ota and Takehiro Kitaura

413-6 2521 Transport of Tritium and Heavy Metals in Unsaturated Soils. Tamer Elbana* and H. Magdi Selim

413-7 2522 Transport and Adsorption-Desorption of Silver in Soils. Liyun Zhang and H. Magdi Selim*

413-8 2523 Physical Oxisols Attributes Due to Crop Diversification During the Sugarcane Fallow Period. Carolina Fernandes* and Roniram Pereira Silva

413-9 2524 Application of Thermo-Time Domain Reflectometry Techniques to Estimate Oil Concentration of Unsaturated Soil. Shinshuke Aoki* and Kosuke Noborio


413-11 2526 Field Test and Sensitivity Analysis Of a Sensible Heat Balance Method To Determine Rates Of Soil Freezing and Thawing. Yuki Kojima*, Joshua L. Heitman, Gerald N. Flerchinger, Tusheng Ren and Robert Horton


413-13 2528 Determination of Irrigation Depths Using a Process Model and Quantitative Weather Forecast. Fujimaki Haruyuki*, Ieyasu Tokumoto, Tadaomi Saito and Masashi Shibata

413-14 2529 A Reevaluation of TDR Travel Time Estimation in Soils and Geological Media. Robert C. Schwartz*, Joaquim Casanova, Jourdan M. Bell and Steven R. Evert


413-17 2532 Determination of Reflection Positions in TDR Signals With Curvature Analysis. Zhuangji Wang*, Yuki Kojima, Yan Chen and Robert Horton

413-18 2533 Measured and Estimated Soil Hydraulic Conductivity In Continuous Con and Reconstructed Prairie. Sitha Kettpratoom, Dedrick D. Davis*, Robert P. Ewing and Robert Horton


413-20 2535 Incremental Surface Flooding to Optimize Leaching Efficiency – A Numerical Analysis. Juan R. Gonzalez Cena*, Donald C. Slack and Markus Toller


413-25 2600 Thermal Properties of Desert Soils Irrigated With Industrial and Municipal Wastewater. Manoj K. Shukla, Pradip Adhikari* and Theodore Sammis

413-26 2601 Compensated Root Water Uptake for Drip Irrigated Chile. Manoj K. Shukla and Harmandeep Sharma*

413-27 2602 The Effects of Dairy Cow Live-Weight and Stocking-Density on the Physical Properties of a Poorly Drained Soil. Pat Tuohy*
SESSION NO. 414
Soil Sensing for Crop Water Management: II
SSSA Division: Soil Physics
Section or Division Cosponsor: Climatology & Modeling
Community Cosponsors: Agroclimatology and Agronomic Modeling Community, Sensor-Based Water Management Community
TCC, East Hall, Third Floor
Presiders: Steven R. Evett; Timothy R. Green
2:00 PM–4:00 PM

414-1 2603  Root Water Uptake By Romaine Lettuce in a Histosol: Linking Tip Burn Damage to Water Stress. Yann Périard, Jean Caron*, Jonathan A Lafond and Sylvain Jutras

414-2 2604  Can Orthogonal Projections of Visnir Spectra Yield Useful Information On Soil Water? Jason F. Ackerson*, Cristine L. S. Morgan, Yufeng Ge and Alex McBratney

414-3 2605  Improved Calibration For Estimating Soil Properties With a Multi-Functional Heat Pulse Probe. Andrew Conrad Sherfy* and Jaehoon Lee

SESSION NO. 415
Soil Amendment Effects On Environmental Processes
SSSA Division: Soils & Environmental Quality
Section or Division Cosponsor: Soils & Environmental Quality
TCC, Room 10, First Floor
Presider: Darshani Kumaragamage
8:30 AM–11:30 AM

8:30 AM Introductory Remarks.

415-1 8:35 AM  Evaluating Eucalyptus Sp. Trees Exposed To Chemical Oxidation and Their Potential To Phytoremediate Organic Solvents. Diego Barcellos*, Lawrence A. Morris, Tiago Moura and Aaron Thompson

415-2 8:50 AM  Industry By-Products As Amendments for Phytoremediation of An As-Contaminated Soil From a Gold Mining Area, Brazil. Luiz-Roberto R G Guilherme*, Guilherme Lopes, Paulo A A Ferreira and Fernanda G Pereira

415-3 9:05 AM  Response of An Ultisol Polluted With Crude Oil to Amelioration With Cattle Dung. Ikponmwosa Abraham Ogbohgodho* and Emmanuel Ochuko Ufunmile

9:20 AM Break.

415-4 9:40 AM  Microbial Community Response to Oil-Impacted Marsh Soils Treated With Nitrogen and Rhamnolipid Bio-Surfactant. chang liu*, Jim J. Wang and Syam K. Dodla


10:25 AM Break 2.


415-8 11:00 AM  Alum–Amended and Non-Amended Poultry Litter Impacts On Soil pH and Mehlich-I Phosphorus On a Long-Term No-Till Rotation. Catherine Fleming* and Mark S. Reiter


11:30 AM Adjourn.

SESSION NO. 416
Nutrient Loss As Affected By Management
SSSA Division: Soils & Environmental Quality
TCC, Room 11, First Floor
Presider: Chin Tan
9:30 AM–11:05 AM

9:30 AM Introductory Remarks.

416-1 9:35 AM  Nitrate Removal By Perennial Filter Strips In The Toeslope Of Cropland Watersheds. Javed Iqbal*, Michael J Castellano, Matthew J. Parkin and Xiaobo Zhou


416-3 10:05 AM  Drain Water Discharge and Nitrogen Losses in Response To Tile Drain Spacing and Depth In Southern Ontario. Chin Tan* and Tiequan Zhang

10:20 AM Break.


11:05 AM Adjourn.

SESSION NO. 417
General Soils & Environmental Quality
SSSA Division: Soils & Environmental Quality
TCC, Room 10, First Floor
Presider: Jorge A. Leiva
1:15 PM–2:20 PM

1:15 PM Introductory Remarks.

417-1 1:20 PM  Legacy Trends In Heavy Metal Pollution In a Saltmarsh Sediment Profile In The Clyde Estuary, Scotland, United Kingdom. OLAY-INKA I. NWACHUKWU*, Gillian MacKinnon, Angus B. Mackenzie and Ian D. Pulford

417-2 1:35 PM  Determining a Constituent Release Index From Overburden Material Using Laboratory Weathering Experiments. Jessica L. odenheimer*, Jeffrey G. Skousen, Louis M. McDonald and Dorothy Vesper


2:20 PM Adjourn.
SESSION NO. 418  
General Soils & Environmental Quality: Posters  
SSSA Division: Soils & Environmental Quality  
TCC, East Hall, Third Floor  
2:30 PM–4:30 PM

418-1 2702  
Imidacloprid Fate and Transport In Florida Flatwoods Soils During Control Of Asian Citrus Psyllid. Jorge A. Leiva*, Peter Nkedi-Kizza, Kelly T. Morgan, Jawwad A. Qureshi and Thomas A. Obreza

418-2 2703  
Genetic and Physiological Responses of Deschampsia Cespitosa to Soil Metal Contamination. Melanie Mehes-Smith*, Kabwe K. Nkongolo and Sophie Gervais

418-3 2704  
Arsenic Retention In Foliage and Soil Following MSMA Application To Turfgrass. Audrey Matteson*, Travis Gannon, DJ Mahoney, Stephanie Haines, Matthew Jeffries and Matthew Polizzotto

418-4 2705  
Comparison of Two Back Titration Techniques for Neutralization Potential Determination of Coal Mining Overburden. Marianne Mannix*, Louis M. McDonald and Jeffrey G. Skousen

418-5 2706  
Rapid Analysis of Soil Samples By Flame Atomic Absorption. Andrew Kavan

418-6 2707  
Phytoextraction Of RDX-Contaminated Aqueous Media By Vetiver Grass (Chryso-argon zizanioides). Padmini Das, Aparupa Sengupta*, Diane Nelson, Dibyendu Sarkar and Rupali Datta

418-7 2708  
Chemical Characterization of Plant-Available Cadmium in Soils From Ecuadorian Cacao Farms. Eduardo Chavez*, Zhenli He, Peter J. Stoffella, Byron Moyano del Pezo and Virupax C. Baligar

418-8 2709  
Enhancing Biodegradation of Glyphosate Using Biofilter System. Frieda Elvazi and Bei Chu

418-9 2710  
Baseline Concentrations of Selenium and Mercury In Cerrado Soils, Brazil. Geila Santos Carvalho*, Lívia Botelho Abreu, Luiz-Roberto R G Guilherme and João José Granate de Sá e Melo Marques

418-10 2711  
Single and Sequential Extractions of Heavy Metals in Soils From Mining and Smelting Areas in Brazil. Guilherme Lopes*, Enio Tarso de Souza Costa, Evanise Silva Penido, Luiz-Roberto R G Guilherme and Donald L. Sparks

418-11 2712  
Influence of Standard Solution Concentrations in Analysis By Txf Technique. Geila Santos Carvalho*, Guilherme Soares Dinali, Cristiano Gonçalves Moreira, Luiza Maria Pereira Pierangeli, Camila Carvalho and Luiz-Roberto R G Guilherme

418-12 2713  
The Compostability of Grease-Resistant Paper: Examining Biodegradation, Disintegration and Eco-Toxicity. Tracy Westbury* and Robert C. Michitsch

418-13 2714  
Residues of Pendimethalin in Field Crops. Dr.Sireesha Ambati* and Dr.P.Chandrasekhar Rao

418-14 2715  
Effects of Non-Uniform Salinity On Growth and Physiology of Citrus Seedlings. Mongi Zekri* and Lawrence R. Parsons

SESSION NO. 419  
Nutrient Loss As Affected By Management: Posters  
SSSA Division: Soils & Environmental Quality  
TCC, East Hall, Third Floor  
2:30 PM–4:30 PM

419-1 2716  
Soil Moisture Content Controls the Denitrification Loss of Urea-N From Silty Clayey Soils. Rakesh Awale* and Amitava Chatterjee

419-2 2717  
Using An Exchange Frequency Index to Identify Sites At Risk for Over-Winter Leaching. Patrick J Forrestal*, John J. Meisinger and Robert J. Kratochvil

419-3 2718  

419-4 2719  

419-5 2720  
The Contributions of Nitrogen and Irrigation Management in Reducing the Risk of N Leaching in Florida Potato Production. Amanda Desormeaux* and George Hochmuth

419-7 2722  
Use of the ISN Gas Flux Method to Calculate the Emission Factor for N2O in a Brazilian Soil Cultivated With Sugarcane. João Jose de Miranda Milagres*, Carlos Roberto San't Ana Filho, Evandro Luiz Schoninger Sr., Andre Cesar Vitti, Paulo C. Ocheuze Trivelin Sr. and Jose Albertino Bendassolli Sr.

419-8 2723  
Assessing The Efficacy Of Nitrification and Urease Inhibitors On Nitrous Oxide and Ammonia Emissions In Forage Seed Production In The Saskatchewan Parkland Region. Nils Yannikos*, Fran L. Walley and Richard Farrell

419-9 2724  
Testing the Effectiveness of Targeted Conservation With a Paired Watershed Approach. Laura W. Good*, Rebecca Carvin, Jasmeet Lamba, John Panuska, K.G. Karthikeyan, Anita M. Thompson and Faith Fitzpatrick

419-10 2725  
Effects Of Tile Drain Depth and Spacing On Phosphorous Losses Under Corn and Soybean Rotation. Chin Tan* and Tiequan Zhang

419-11 2726  

419-12 2726  
Manure Application Methods in Pastures to Reduce Nitrogen Loss By Ammonia Volatilization and Increase Forage Quality and Yield in the Pre-Amazon Region of Brazil. Francirote Shigaki*, Bruno Alves, Peter J. A. Kleinman, Marcos Gervasio Pereira and Curtis J. Dell

197
SESSION NO. 420
Soil Amendment Effects On Environmental Processes: Posters

SSSA Division: Soils & Environmental Quality
TCC, East Hall, Third Floor
2:30 PM–4:30 PM
420-1 2727 Leaching Release of Heavy Metals Cadmium, Cobalt, Chromium, Copper, Nickel, Lead, and Zinc From Slag-Amended Sandy Soils. Yuangen Yang*, Zhisheng Jin, Taoze Liu and Congqiang liu
420-2 2728 Effects of Biochar and Cover Crops On Nitrogen Leaching and Soil Physical Properties in a Central Wisconsin Soil. Michelle Scarpace*, Dana Mae Christel and Jacob Reed Prater
420-3 2729 Long-Term Effects of Biosolid and Fly Ash Utilization On the Reclamation of Acid Mine Spoil. Michael E. Essington and Sarah Sheffel*
420-4 2730 Effects Of Biosolids Addition On The Total and Plant Available Copper In The Contaminated Stamp Sands Of Torch Lake: An Incubation Study. Virinder Sidhu*, Diabyendu Sarkar, Sudipta Rakshit and Rupali Datta
420-5 2731 NH3 Losses Following Surface Application of Poultry Manures As Measured Using Wind Tunnels and Semi-Open Chambers. Ezequiel Miola, Philippe Rochette*, Denis Angers, Martin Chantigny, Marc-Olivier Gasser, David Pelster, Normand Bertrand and Celso Aita
420-6 2732 Effects of Biochar On Copper (Cu) Immobilization and Nutrient Release in Contaminated Soils. Santanu Bakshi*, Zhenli He, Willie G. Harris and Peter J. Stoffella
420-7 2733 Impact of Management Practice On Weoc and Weon From a12-Yr Poultry Litter Amended Soil. Mingchu Zhang, Robert Harmel, Zhongqi He, Heidi Waldrip* and Paulo Humberto Pagliari
420-8 2734 Ammonium Removal From Landfill Leachate By Struvite (magnesium ammonium phosphate) Precipitation. Anthony Roche*, Robert C. Michitsch and Jacob Reed Prater
420-9 2735 Remediation of Lead in Mine-Contaminated Wetland Soils Using Phosphate Amendment. Daniel G. Strawin* and Lydia Osborne
420-10 2736 Soil Fungi Diversity and Abundance in Limed and Unlimed Areas Contaminated With Metals in the Greater Sudbury Region. Kassandre Goupil* and Kabwe K. Nkongolo
420-11 2737 Application Of Chemical Amendments For Reducing Bioaccumulation Of Heavy Metal In Agricultural Field, Korea. Jae E. Yang*, Sung Chul Kim, Se Jin Oh, Seung Min Oh and Jin Soo Lee
420-12 2738 Determining Soil Quality Index (SQI) For Heavy Metal Contaminated Agricultural Field. Sung Chul Kim*, Jae E. Yang, Ju Hee Kim, Byeong Joo Lee, Young Kyu Hong, Se Jin Oh, Seung Min Oh and Jin Soo Lee

SESSION NO. 421
Symposium—Integration Of Perennials To Enhance Agroecosystem Services and Provide Renewable Energy Sources

SSSA Division: Soil & Water Management & Conservation
TCC, Room 22 and 23, First Floor
8:05 AM Introductory Remarks.
421-1 8:10 AM Resilience of Integrated Crop-Forage-Grazing Systems Subject to Dynamic Climate, Markets, and Policy. Jean L. Steiner*
421-3 9:00 AM Evaluating Water Quality and Quantity Outcomes of Switching From Row Crops to Perennial Biomass Crops in a Tile-Drained Watershed. David J. Mull*, Brent J. Dalzell, D. Pennington, S. Polasky and S. Taff
421-4 9:25 AM The Effect On Soil Quality of Integrating Perennial Crops Into Cropping Systems in Response to Demand for Bioenergy Feedstock. Ted Huffman*
9:50 AM Break.
421-5 10:05 AM Assessment of Perennial Grass Production System for Biofuel Production: Analysis of Ecosystem Services of Perennial Systems Under Climate Variability Relative to Traditional Cropping Sources. Dennis Ojima*
421-6 10:30 AM Circular Buffer Strips In Center Pivot Irrigation For Multiple Benefits In The Southern Great Plains. Sangamesh V. Angadi* and Prasanna H. Gowda
421-7 10:55 AM Integration of Prairie Strips Into Agricultural Landscapes to Enhance Ecosystem Services: An Iowa Example. Matthew J. Helmers*, Lisa Schulte-Moore, J. Arbuckle, Pauline Drobney, Mary Harris, Randall K. Kolka, Matt Liebman, Matt O’Neal and John Tyndall
11:45 AM Adjourn.

SESSION NO. 422
Nitrogen Management and Conservation

SSSA Division: Soil & Water Management & Conservation
TCC, Room 1 and 2, First Floor
Presider: Dorcas H. Franklin
12:40 PM Introductory Remarks.
422-1 12:45 PM Soil Water and Nitrate Inputs Into Groundwater Across a Land Use and N Fertilization Gradient. Marc Kramer*, George Hotchmuth and Mark Clark
422-2 1:00 PM Accounting for High Nitrate in Well Water to Meet Crop Nitrogen Needs. Paul B. DeLaune*, Danielle Dittrich and Frank M. Hons
SESSION NO. 425 — SOIL & WATER MANAGEMENT & CONSERVATION

425-1 1:10 PM Session Open
425-2 1:15 PM Characterization and Classification Of Anthropogenic Soils With Urban Soil Quality And Productivity
425-3 1:30 PM Soil Quality And Productivity For Growing Vegetables
425-4 1:45 PM Impacts Of Biochar, Biosolids, Wood Chips, Compost, Compost Tea, And N Fertilizer On Urban Soils And Tree Growth
425-5 2:00 PM Break
425-6 2:15 PM Assessing Stormwater Infiltration Remediation Approaches For Developed, Compacted Soils
425-7 2:30 PM Adjourn.

SESSION NO. 426

Soil & Water Management & Conservation Business Meeting

SSSA Division: Soil & Water Management & Conservation
TCC, Room 11, First Floor
Presider: Alan J. Franzluebbers

2:30 PM–4:00 PM

SESSION NO. 427

General Urban and Anthropogenic Soils

SSSA Division: Urban and Anthropogenic Soils
Marriott Waterside, Room 11, Third Level
Presider: Bryant Chad Scharenbroch

8:00 AM–10:00 AM

8:00 AM Introductory Remarks.

427-1 8:05 AM Characterization and Classification On Anthropogenic Landscapes Of Major Cities In The US
427-2 8:20 AM Comparison Of Dioxin/Furan Characteristics In Different US Cities
427-3 8:35 AM Assessing Soil Preparation Techniques to Improve Portable XRF Precision and Recovery Efficiency Of Lead In Urban Soils As Compared to the EPA 3051 Total Soil Digestion Method
427-4 8:50 AM Impacts Of Biochar, Biosolids, Wood Chips, Compost, Compost Tea, And N Fertilizer On Urban Soils And Tree Growth
427-5 9:05 AM Break

9:05 AM Adjourn.
SESSION NO. 427

Symposium—Coastal Wetland Soils

SSSA Division: Wetland Soils
Marriott Waterside, Room 12, Third Level
Presider: Brian A. Needelman
8:25 AM–11:45 AM

8:25 AM Introductory Remarks.

427-1 8:30 AM Dynamics of Mangrove Forest Sediment Surface Elevation in the Coastal Everglades in Relation to Sea Level Rise, Disturbance and Climate Change. Thomas Smith*


9:20 AM Break.

427-3 9:30 AM Controls On Soil Porewater Salinities in Barrier-Island Mangroves, North Hutchinson Island, Florida. Mark Rains*


10:45 AM Break.


427-7 11:20 AM Will Coastal Peatlands be a Nitrogen Source to Marine Ecosystem Under Increasing Drought and Storm Events? Hongjun Wang*, Mengchi Ho and Curtis J. Richardson

11:45 AM Adjourn.

SESSION NO. 428

Wetland Soils Business Meeting

SSSA Division: Wetland Soils
Marriott Waterside, Room 12, Third Level
Presider: Alan L. Wright
1:00 PM–2:00 PM