

Reducing Aflatoxin Contamination in Corn

POSTER PRESENTATIONS

Old Main Lounge
Whittington Room

- 1. Instrument Development for Rapid and Non-invasive Aflatoxin Detection in Corn.** Haibo Yao^a, Zuzana Hruska^a, Russell Kincaid^a, Ambrose Ononye^a, Robert Brown^b, Thomas Cleveland^c, Deepak Bhatnagar^b. ^a*Geosystems Research Institute, Mississippi State University, Stennis Space Center, MS;* ^b*USDA-ARS, Food and Feed Safety Research Unit, Southern Regional Research Center, New Orleans, LA;* ^c*USDA-ARS, Southern Regional Research Center, New Orleans, LA.*
- 2. Methods Used to Isolate *Aspergillus* Populations Associated With Air, Soil, Foliage and Reproductive Organs of BT and Non-BT Corn.** Bobbie J. Johnson, Hamed K. Abbas, and Robert M. Zablotowicz. *USDA-ARS, Crop Genetics and Production Research Unit, Stoneville, MS.*
- 3. Methods Used to Detect Aflatoxin Persistence in Corn Residues Under No-Till and Conventional Tillage Management.** Nick A. Phillips, Hamed K. Abbas, Robert M. Zablotowicz, Bobbie J. Johnson, Cesare Accinelli and Craig A. Abel. *USDA-ARS, Crop Genetics and Production Research Unit, Stoneville, MS.*
- 4. Inoculation Techniques in the Field Screening and Selection for Corn Inbred and Hybrids Resistance to Preharvest Aflatoxin Contamination.** Baozhu Guo^{a,*}, Matt Krakowsky^{b,c}, Xinzhi Ni^b, Jeff Wilson^b, Hamed Abbas^d, Robert Kemerait^e, Dewey Lee^e, Brian Scully^a, Brien Henry^f. ^a*USDA-ARS, Crop Protection and Management Research Unit, Tifton, GA;* ^b*USDA-ARS, Plant Science Research Unit, Raleigh, NC;* ^c*USDA-ARS, Crop Genetics and Breeding Research Unit, Tifton, GA;* ^d*USDA-ARS, Crop Genetics and Production Research Unit, Stoneville, MS;* ^e*University of Georgia, Tifton, GA;* ^f*USDA-ARS, Corn Host Plant Resistance Research Unit, Starkville, MS.*
- 5. Benefits and Limitations of Using Ground Distributed *Aspergillus flavus*-Colonized Kernels as Inoculum to Screen for Resistance to Aflatoxin Accumulation in Corn.** G.N. Odvody and J.C. Remmers. *Texas AgriLife Research and Extension Center, Corpus Christi, TX.*
- 6. *Aspergillus flavus* Biomass in Maize Hybrids Estimated by Quantitative Real-Time PCR is Highly Correlated with Aflatoxin Concentration.** Santiago Mideros and Rebecca Nelson. *Cornell University Ithaca, NY.*
- 7. Methods Used in Aflatoxin Field Research in Texas.** Kerry Mayfield^a and Tom Isakeit^b. ^a*Department of Soil and Crop Sciences, College Station, TX;* ^b*Department of Plant Pathology, College Station, TX.*
- 8. Techniques Used to Evaluate Corn for Resistance to *Aspergillus flavus* and Aflatoxin Contamination in Field Studies.** Gary Windham and Paul Williams. *USDA-ARS, Corn Host Plant Resistance Research Unit, Mississippi State, MS.*

9. **A Comparison of the Side-Needle and Knife Techniques for Inducing *Aspergillus flavus* Infection and Aflatoxin Accumulation in Corn Hybrids.** W. Brien Henry^a, Matthew D. Krakowsky^b, Gary L. Windham^a, Brian T. Scully^c, Dennis Rowe^d, Leigh K. Hawkins^a, and W. Paul Williams^a. ^a *USDA-ARS Corn Host Plant Resistance Research Unit, Mississippi State, MS*; ^b *USDA-ARS Plant Science Research Unit, Raleigh, NC*; ^c *USDA-ARS Crop Protection and Management Research Unit, Tifton, GA*; ^d *Mississippi Agricultural and Forestry Experiment Station, Mississippi State, MS*.
10. **Screening Corn Germplasm for Aflatoxin Resistance Using the Kernel Screening Assay.** Robert Brown. *Southern Regional Research Center, USDA-ARS, New Orleans, LA*.
11. **Quantification of *Aspergillus flavus* Biomass in Single Cross Hybrids by Real-Time PCR.** Seval Ozkan^a, Arunkanth Ankala^b, Gary L. Windham^c, and W. Paul Williams^c. ^a *Department of Plant and Soil Sciences, Mississippi State University*; ^b *Department of Biochemistry and Molecular Biology, Mississippi State University*; ^c *USDA-ARS Corn Host Plant Resistance Research Unit, Mississippi State, MS*.
12. **Tracking *Aspergillus flavus* and Aflatoxin Contamination.** K. Rajasekaran, J.W. Cary, D. Bhatnagar, and T.E. Cleveland. *USDA-ARS-Southern Regional Research Center. New Orleans, LA*.
13. **A New Decision Tree Approach for Classifying Fungal Species Based on DNA Denaturation.** Jonathan Harper^{a,b}, Biing-Ru Wu^c, Bruce Horn^d, Maren Klich^e, Jeff Wilkinson^c, Susan M. Bridges^{a,b}. ^a *Department of Computer Science and Engineering, Mississippi State University*; ^b *Institute for Digital Biology, Mississippi State University*; ^c *Department of Biochemistry and Molecular Biology, Mississippi State University*; ^d *National Peanut Research Lab, USDA Agricultural Research Service, Dawson Georgia*; ^e *Food and Feed Safety Research, USDA Agricultural Research Service, New Orleans, LA*
14. **A Database for Candidate Gene Selection for *Aspergillus* Resistance in Maize.** Jonathan Harper^{a,b}, Susan Bridges^{a,b}, Marilyn Warburton^c, Rowena Kelley^d, Seval Ozkan^e, Leigh Hawkins^c, Paul Williams^c. ^a *Department of Computer Science and Engineering, Mississippi State University*; ^b *Institute for Digital Biology, Mississippi State University*; ^c *Corn Host Plant Resistance Research, USDA Agricultural Research Service, Mississippi State, MS*; ^d *Department of Biochemistry and Molecular Biology, Mississippi State University*; ^e *Department of Plant and Soil Sciences, Mississippi State University*.
15. **An Introduction to Association Mapping.** Marilyn Warburton, *Corn Host Plant Resistance Research, USDA-ARS, Mississippi State, MS*.
16. **Construction and Characterization of a 5X Bacterial Artificial Chromosome (BAC) Library for *Aspergillus*/Aflatoxin Resistant Maize Line Mp313E.** Xueyan Shan^a, W. Paul Williams^b, and Daniel G. Peterson^a. ^a *Department of Plant and Soil Sciences, Mississippi State University*; ^b *USDA-ARS Corn Host Plant Resistance Research Unit, Mississippi State University*.
17. **Promoter Analysis of a Maize Pathogenesis-Related Protein 10 Gene.** Yu-Rong Xie^a, Zhi-Yuan CHEN^a, R.L. Brown^b, and Deepak Bhatnagar^b. ^a *Louisiana State University Agricultural Center, Baton Rouge, LA*; ^b *Southern Regional Research Center, USDA-ARS, New Orleans, LA*.

- 18. Microarray-Based Mapping for the Detection of Molecular Markers in Response to *Aspergillus flavus* Infection in Susceptible and Resistant Maize Lines.** Rowena Y. Kelley^{a*}, Arunkanth Ankala^a, J. Erik Mylroie^a, Debbie L. Boykin^b, Susan M. Bridges^c, Leigh K. Hawkins^d, Gary L. Windham^d, Marilyn L. Warburton^d and W. Paul Williams^d. ^a*Dept of Biochemistry and Molecular Biology, Mississippi State University, Mississippi State, MS;* ^b*USDA-ARS Mid South Area Statistics Office, Stoneville, MS;* ^c*Dept of Computer Science and Engineering, Mississippi State University, Mississippi;* ^d*USDA-ARS Corn Host Plant Resistance Research Unit, Mississippi State, MS*
- 19. Comparison of Gene Expressions of Maize Kernel Pathogenesis-Related Proteins in Different Maize Genotypes.** Jake Fountain^{a,b}, Zhi-Yuan Chen^c, Brian Scully^a, Robert Kemerait^d, Dewey Lee^d, and Baozhu Guo^{a,*}. ^a*USDA-ARS, Crop Protection and Management Research Unit, Tifton, GA;* ^b*Department of Biology, Georgia Southwestern State University, Americus, GA;* ^c*Department of Plant Pathology and Crop Physiology, Louisiana State University Agricultural Center, Baton Rouge, LA;* ^d*University of Georgia, Tifton, GA.*
- 20. Gene Expression Profiles in Developing Corn Kernels in Response to Drought Stress.** Baozhu Guo^{a,*}, Zhangying Wang^{b,c}, Meng Luo^{b,d}, Dewey Lee^b, Brian Scully^a. ^a*USDA-ARS, Crop Protection and Management Research Unit, Tifton, GA;* ^b*University of Georgia, Tifton, GA;* ^c*Guangdong Academy of Agricultural Sciences, Guangzhou, China;* ^d*Department of Plant Pathology and Crop Physiology, Louisiana State University Agricultural Center, Baton Rouge, LA.*
- 21. Confirmation of QTL for Reducing Preharvest Aflatoxin in a Maize RIL Population.** Kerry Mayfield^a, Seth Murray^a, Tom Isakeit^b, Gary Odvody^c and William Rooney^a. ^a*Department of Soil and Crop Sciences, College Station, TX;* ^b*Department of Plant Pathology, College Station, TX;* ^c*Texas AgriLife Research and Extension Center, Corpus Christi, TX*
- 22. Evaluation of Gene Specific Marker MpM1 in Populations of F_{2:3} Families for Resistance to Aflatoxin Accumulation in Maize.** Erik J. Mylroie^a, Marilyn L. Warburton^b, Gary L. Windham^b, W. Paul Williams^b and Jeff R. Wilkinson^a. ^a*Department of Biochemistry and Molecular Biology; Mississippi State University, Mississippi State, MS;* ^b*USDA-ARS Corn Host Plant Resistance Unit, Mississippi State, MS.*
- 23. Morphological and Physiological Alteration of Maize Root Architectures on Drought Stress.** Tingbo Jiang^{a,*}, Brian Scully^b, Robert Kemerait^a, Dewey Lee^a, and Baozhu Guo^b. ^a*University of Georgia, Tifton, GA;* ^b*USDA-ARS, Crop Protection and Management Research Unit, Tifton, GA.*
- 24. Spatial Distribution of Aflatoxin Contamination in Relation to Damage by Ear-Feeding Insects in Pre-Harvest Corn.** Xinzhi Ni^a, Jeffrey P. Wilson^a, Matthew D. Krakowsky^b, Baozhu Guo^c, Brian T. Scully^c, G. David Buntin^d, R. Dewey Lee^e, and Ted E. Cottrell^f. ^a*USDA-ARS, Crop Genetics and Breeding Research Unit, Tifton, GA;* ^b*USDA-ARS, Plant Science Research Unit, Raleigh, NC;* ^c*USDA-ARS, Crop Protection and Management Research Unit, Tifton, GA;* ^d*Department of Entomology, University of Georgia, Griffin, GA;* ^e*Department of Plant Soil Sciences, University of Georgia, Tifton, GA;* ^f*USDA-ARS, Southeast Fruit and Tree Nut Research Laboratory, Byron, GA*