26th Annual

Texas Plant Protection Conference

"Water: The Limiting Factor for Crop Production in Texas"

December 10 & 11, 2014

The Brazos Center
Bryan, Texas
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2014 Conference Agenda

26TH ANNUAL
TEXAS PLANT PROTECTION CONFERENCE

“Water: The Limiting Factor for Crop Production in Texas”

December 10, 2014

8:00 am – 5 pm Conference Registration Desk Open

8:00 – 9:00 am Table-top Display Set-up

9:00 am – 12:00 noon General Session #1

Moderator: Dale Mott, TPPA President

9:00 – 9:05 am Welcome - William Dugas, Acting Vice Chancellor for Texas A&M AgriLife

9:05 – 9:20 am 1 Impact of the Drought on Texas Agriculture – Travis Miller, Interim Director for State Operations with the Texas A & M AgriLife Extension Service

9:20 – 9:40 am 2 Climate Variability: Texas and the Triple Whammy – John Nielsen-Gammon, Texas State Climatologist, Texas A & M University

9:40 – 10:00 am 3 How SWIFT Will Meet Texas’ Water Needs – Carlos Rubinstein, Chairman, Texas Water Development Board

10:00 – 10:30 am Break- Review Posters & Displays

10:30 – 10:50 am 4 Texas Alliance for Water Conservation: A Model for Conserving Water in Irrigated Cropland of West Texas– Rick Kellison, Texas Alliance for Water Conservation

10:50 – 11:10 am 5 Irrigation Methods and Management - Jim Bordovsky, Texas A & M AgriLife Research

11:10 – 11:30 am 6 Agricultural Innovations from Industry to deal with Climate Change, - Dr. Shannon Haufl, Global Cotton & Specialty Crops Lead, Monsanto

11:30 – 11:50 am 7 Is Water Limiting our Ability to Produce?– J. Allen Carnes, Farmer & Owner, Winter Garden Produce, Uvalde Texas

12:00 noon – 1:30 pm Lunch (on your own)

1:30 pm – 2:30 pm General Session # 2
2014 Conference Agenda

1:30 – 1:50 pm  8 Drought Impact on Texas Wildlife – Roel Lopez, Director, Texas A&M Institute of Renewable Natural Resources

1:50 – 2:10 pm  9 Unmanned Aerial Vehicles (UAV's) in Agriculture - Mac McKee, Executive Director, Water Research Laboratory, Utah State University

2:10 – 2:30 pm  10 Precision to Decision: Managing the Most Critical Inputs – Nitrogen and Water - Ron Sabatka, DuPont Pioneer - Encirca Services Business Unit Lead – Western Business Unit, Wahoo, NE

2:30 – 3:00 pm-------------------------------------------------Break – Poster Review – View Displays

3:00 – 3:30 pm---------------------------------------------------------------Pest ID Contest
Barron Redact, Texas AgriLife Extension Service, Chairman

3:30 - 5:45 pm-------------------------------------------------------------General Session

New Technology & Chemistry
Moderator: Gary Schwarzlose, Bayer Crop Science

✓ 3:30 – 3:45 pm  11 “BASF Update: Providing Solutions for Growers”, Adam Hixson, BASF

3:45 – 4:00 pm  12 “Bayer CropScience Product Update”, Gary Schwarzlose, Bayer CropScience

4:00 – 4:15 pm  13 “Dow AgroSciences LLC Insecticide Update”, Vernon Langston, Dow AgroSciences

4:15 – 4:30 pm  14 “New Technology from DuPont Crop Protection”, Eric Castner, DuPont Crop Protection

4:30 – 4:45 pm  15 “Roundup Ready Xtend Crop System Details and Updates”, Luke Ethordge, Monsanto

4:45 – 5:00 pm  16 “Nichino America Product Update”, Scott Ludwig, Nichino America

5:00 – 5:15 pm  17 “New Products from Syngenta”, Pete Eure, Syngenta Crop Protection

5:15 – 5:30 pm  18 “New Products and Updated Use Patterns from Valent USA”, Chris Meador, Valent USA

5:30 -5:45 pm  19 "PMDI- Precision Mobile Drip Irrigation", Danny Sosebee, Netafim
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December 11, 2014

7:30 am – 3 pm Conference Registration Desk Open

General Session

8:00 – 9:00 am Laws & Regulations
Moderator: Randy Rivera, Texas Department of Agriculture

9:00 – 10:00 am Fertility Management
Moderator: Jimmy Schultz, Sanders, inc

9:00 – 9:15 am 20 "Ammonia Nitrate Legislation Update", Donnie Dippel, President, Texas Ag Industries Association


9:30 – 9:45 am 22 "State of the Fertilizer Industry", Larry Unruh, American Plant Food Corporation

9:45 – 10:00 am 23 "Cover Crops to Enhance Nutrient Availability", Willie Durham, USDA-NRCS

10:00 – 10:30 am Break - Poster Review - View Displays

10:30 – 12:00 noon Concurrent Sessions

Grain (Corn, Sorghum, Rice, Soybeans)

Moderator: Clark Neely, Texas A & M AgriLife Extension Service

10:30 – 10:45 am 24 "Sugarcane aphid on sorghum: distribution, damage, thresholds, and Insecticides", Michael Brewer, Assistant Professor and Field Crop Entomologist Texas A&M AgriLife Research and Extension Center, Corpus Christi, TX

10:45 – 11:00 am 25 "Texas Grain Sorghum Production/Technology Update", Wayne Cleveland, Executive Director, Texas Grain Sorghum Producers

11:00 – 11:15 am 26 "New Developments from RiceTec", Brian Ottis, Solutions Development Manager, RiceTec

11:15 – 11:30 am 27 "High Throughput Root Biomass Phenotyping in Wheat as a Mean to Increase the Speed of Drought Adaptive Trait Breeding", Dirk B. Hays Prof Cereal Grains Geneticist, Department of Soil and Crop Sciences, Texas A&M University, College Station, TX
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11:30 – 11:45 am 28 “Potential for Increased Cowpea Production in Texas”, B.B. Singh, Visiting Professor and Cowpea Breeder Department of Soil and Crop Sciences and Borlaug Institute for International Agriculture, Texas A&M University, College Station, TX

11:45 – 12:00 noon 29 “The Future of Canola in Texas”, Clark Neely, Assistant Professor and Small Grains Extension Specialist, Texas A&M AgriLife Extension, Texas A&M University, College Station, TX

Cotton (Production & Genetics)  
Moderator: Gaylon Morgan, Texas A & M AgriLife Extension Service

10:30 -10:45 am 30 “Farm Bill and Crop Insurance Update: What are the Critical Changes for 2015?” Joe Outlaw, Texas A & M AgriLife Extension Service

10:45 – 11:00 am 31 “Cotton Market Outlook and Risk Management Considerations” John Robinson, Texas A & M AgriLife Extension Service

11:00 – 11:15 am 32 “The Enlist Weed Control System- An Update”, Robert Lemon and Jonathan Siebert, Dow AgroSciences

11:15 – 11:30 am 33 “Bollgard II XtendFlex Cotton Update and Performance”, Shane Halfmann, Monsanto


11:45 – 12:00 noon 35 “WideStrike and BollGard Protected Cotton: Performance Comparisons of Current and Next Generation Bt Products”, Robert Bowling, Texas A & M AgriLife Extension Service

12:00 noon – 2:00 pm  
Awards Luncheon & Business Meeting
Moderator: Dale Mett, 2014 TPP4 President (included in registration fee)

2:00 – 3:30 pm  Concurrent Sessions

Horticulture / Turf  
Moderator: Joe Masabni, Texas A & M AgriLife Extension Service

2:00 - 2:15 pm 36 “Turfgrass Water Use: Considerations of Quantity and Quality”, Casey Reynolds, Assistant Professor and State Extension Turfgrass Specialist, Department of Soil and Crop Sciences, Texas A&M University

2:15 – 2:30 pm 37 “Aquaponics in Texas” Joseph Masabni, Assistant Professor and Extension
2014 Conference Agenda

Vegetable Specialist, Department of Horticultural Sciences, Texas A&M University

2:30 – 2:45 pm  38 "Gray Water Use in the Landscape", Raul Cabrera, Associate Professor, Uvalde Research and Education Center, Texas A&M University

2:45 – 3:00 pm  39 "Ornamental Crops Research", Sean Caver, MS Student, Dept. of Horticultural Sciences, Texas A&M University

3:00 – 3:15 pm  40 "Strawberry Production in Texas", Russ Wallace, Associate Professor and Extension Horticulturist, Lubbock Research and Education Center, Texas A&M University

3:15 – 3:30 pm  41 "Turfgrass for Texas: Now and in the Future", John Cosper, Executive Director of Turfgrass Producers of Texas, Houston, TX

3:30 – 3:45 pm  42 "Vertical Farming – A new form of plant production", Dr. Genhua Niu, Associate Professor, Texas A & M AgriLife Research Center, El Paso, TX

Pasture & Rangeland

Moderator: Vernon Langston, Dow AgroSciences

2:00 - 2:15 pm  43 “Managing Tanglehead in South Texas with Patch Burning and Grazing”, Megan K Clayton, Erasmo Montemayor, and Robert K. Lyons, Texas A & M AgriLife Extension Service

2:15 – 2:30 pm  44 “Building Soil Health with Grazing Management”, Jeff Goodwin, USDA-NRCS, Darren Harel, USDA-ARS, Nathan Haile, USDA-NRCS, Willie Durham, USDA-NRCS

2:30 – 2:45 pm  45 “Individual Plant Treatments: Methods and Products for Superior Control of Brush Species”, V.B. Langston, P.L. Burch, D.C. Cummings, E.S. Flynn, M.B. Halstead, V.F. Peterson, Dow AgroSciences

2:45 – 3:00 pm  46 “Insect Management in Pastures and Hay Meadows”, Stephen Biles, Texas A&M AgriLife Extension Service

3:00 – 3:15 pm  47 “Effects of Simulated 2,4-D and Dicamba Drift on Field Grown Tomato Plants”, Morgan Metting, Paul Baumann, Joseph Masabni, Matt Matocha, Josh McGinty, Texas AgriLife Extension Service

3:15 – 3:30 pm  48 “Pasture Management”, Barron Rector, Texas A & M AgriLife Extension Service

3:30 – 3:45 pm  49 "Upcoming Warm-season Perennial Forage Grass Cultivar Submissions for the Southern U.S.” Russell Jesup, Texas A & M University

3:45 pm Adjourn
wheat cultivar in the US, TAM 111. RILs were phenotyped in three and five environments in the US in 2013 and 2014 respectively. A set of 90,000 single nucleotide polymorphic (SNP) markers from Illumina’s Infinium iSelect array were used for genome-wide screening of the population. QTL for grain yield were tagged on chromosome 1A and 1B for both years and several QTL for yield components co-localized with QTL for grain yield. In study II, Wsm2, a gene conferring resistance to wheat streak mosaic virus was fine mapped and the diagnostic SNP markers were validated. In study III, Three Kenyan popular cultivars, Robin, Sunbird, Eagle-10, were backcrossed with TAM 111 and BC1F2 seeds will be screened using high throughput diagnostic SNP markers identified in study I for drought tolerance at field. The F2 and BC1F2 seeds will be phenotyped in Kenya for selection under rust and drought tolerance. The ultimate goal is to develop hard red spring wheat for Kenya and other African countries and winter wheat with combined rust resistance and drought tolerance for Texas and US hard red winter wheat regions.

5

Influence of media and potato genotype on microtubering
Ida A. Asfariini, Associate Professor, Biology Department, Udayana University, Bali, INA
Angel Chappell, Research Associate; Douglas C. Scheuring, Senior Research Associate; Sean M. Thompson, Postdoctoral Research Associate; J. Creighton Miller, Jr., Professor, Texas A&M University, Department of Horticultural Sciences, College Station, Texas

Providing virus free, early generation seed is a major potato production problem in developing countries. Minituber production under greenhouse conditions still poses the risk of insect contamination and virus transmission. In vitro microtuberization provides an alternative method in the production of clean nuclear seed. The aim of this study was to determine the optimum media for microtuber production in four potato genotypes. Media consisted of Murashige and Skoog (MS) salts and vitamins, 60 g/L sucrose with four treatment combinations, i.e. with or without 2 g/L Phytogel, and with or without 10 mg/L Kinetin. There were five replicates for each treatment. Two nodal cuttings were cultured in each test tube. Cultures were maintained under 16h light, 23°C for two weeks, then moved to a cooler growth room at 16°C for two weeks, followed by incubation in the dark at 16°C for 6 weeks. Observations included total microtuber production and average weight after 10 weeks. Results show that genotypes responded differently to the media. Total microtubers ranged from 1 to 4 per stem. Average microtuber weight across treatments ranged from 126 to 389 mg, while individual microtuber weight ranged from 34 to 807 mg. Overall, media with 10 mg/L Kinetin induced the highest microtuber average weight on AOTX9820-1RU and ATTX98518-5P/Y, while media without phytogel and hormone addition induced the highest average microtuber production on ATTX9202-3RU and ATTX98468-5R/Y. ATTX98468-5R/Y produced the highest average weight (389 mg) compared to other genotypes. Results suggest the importance of developing specific protocols for each genotype for optimum microtuber production.

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Demonstration of Palmer Amaranth Integrated Management Model (PAM) for Stakeholder Inputs
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Larry Steckel, Department of Plant Sciences, West Tennessee Research and Education Center, Jackson, TN
Michael Popp, Department of Agricultural Economics, University of Arkansas, Fayetteville, AR
Jason Norworth, Department of Crop, Soil, and Environmental Sciences, University of Arkansas, Fayetteville, AR
Influence of media and potato genotype on microtuberization
Ida A. Asturini, Associate Professor, Biology Department, Udayana University, Bali, INA
Angel L. Chappell, Technical Assistant; Douglas C. Scheuring, Senior Research Associate; Sean M. Thompson, Postdoctoral Research Associate; J. Creighton Miller, Jr., Professor, Texas A&M University, Department of Horticultural Sciences, College Station, Texas, USA

Introduction
Providing virus-free, early generation seed is a major potato production problem in developing countries. In Indonesia, use of later generation seed potatoes decreases productivity sharply, from 20 tons/ha to 10 tons/ha. Production of early generation potato microtubers under greenhouse conditions still poses the risk of insect contamination and virus transmission. In vitro microtuberization provides an alternative method in the propagation of clean nuclear seed. Microtubers also make storing and transporting potato material easier than microtubers or in vitro plants. The aim of this study was to determine the optimum media for microtuber production in four potato genotypes from the Texas A&M breeding program.

Materials and Methods
Four selections: ATX0202-3R6, ATX0202-1R6, ATX0851S5PY, and ATX0848-SR6Y were used in this investigation. Media consisted of Murashige and Skoog (MS) salts and vitamins, 80 μl sucrose with four treatment combinations of phytagel and kinetin.

Treatment 1 (Control): contained no phytagel or kinetin. (0, 0)
Treatment 2: 2g phytagel and no kinetin. (2, 0)
Treatment 3: no phytagel and 10mg/L kinetin. (0, 10)
Treatment 4: 2g phytagel and 10mg/L kinetin. (2, 10)

There were five replications (Fig. 1a) for each treatment. Two nodal cuttings were cultured in each test tube. Cultures were maintained under 16h light, 23°C for two weeks, then moved to a cooler growth room at 16°C for two weeks, followed by incubation in the dark at 16°C for six weeks.

Microtubers (Fig. 1b) were harvested from the stems, total microtuber count and average weight (mg) were recorded. Other notes on the treatments were root growth and callus formation (Fig. 1c). Microtubers were then placed into Falcon tubes for storage.

Results and Discussion
Results show that genotypes responded differently to the media. Total microtubers produced ranged from five to 21 (Fig. 2). Average microtuber weight across treatments ranged from 126 to 359 mg (Fig. 3), while individual microtuber weight ranged from 34 to 807 mg.

Media with 10 mg/L kinetin induced the highest average microtuber weight on ATX08202-1R6 and ATX0851S5PY, while media with phytagel and hormone addition induced the highest average microtuber production on ATX0202-3R6U and ATX0848-SR6Y. Treatment 1 of ATX0202-3R6U produced the highest average microtuber weight (389 mg) compared to other genotypes (Fig. 5). High concentrations of kinetin also induced callus production on ATX08202-1R6 (Fig. 1c). No microtubers developed on ATX0851S5PY Treatment 1 (Fig. 1d).

These results suggest the importance of developing specific protocols for each genotype for optimum microtuber production. This experiment did not consider the effects of the hormone and phytagel on microtuber dormancy. How the microtubers respond to long-term storage, reintroduction in vitro, greenhouse conditions, and directly planting microtubers in the field will require further investigation.

Acknowledgments
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