MB ALTERNATIVES AREA-WIDE PEST MANAGEMENT PROJECT - SOUTH ATLANTIC PROGRESS REPORT

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A Core Advisory Committee composed of 7 USDA-ARS members, 9 land grant university members and 9 grower and commodity group representatives (Table 1) met three times (December 2006, March and July 2007) to identify information and technology gaps, establish funding priorities and review submitted project proposals. An Executive Committee consisting of grower and commodity group representatives was empowered with final approval for funding project proposals. Eleven projects were supported from funds from the 2007 federal fiscal year (October 1, 2006 through September 30, 2007) and are listed on Table 2.

Eleven large scale field demonstration trials were initiated between January and August 17, 2007 (Table 3). Five were completed by August 17, 2007 and 6 were still in progress. Methyl bromide alternatives were evaluated on tomato, pepper, eggplant, forest nursery seedlings (loblolly pine) and cut flowers (delphinium). Trials were conducted in Florida, Georgia and South Carolina and ranged from 0.5 to 58 acres. Alternative fumigants evaluated included various combinations of 1,3-dichloropropene, chloropicrin, methyl iodide, metam sodium and several combinations of herbicides. Nine different types of plastic films were evaluated including high and low density polyethylene, metalized and virtually impermeable films. Additional demonstration trials on strawberries in Florida, North and South Carolina, pepper in Florida, turf grass in Florida and pine seedlings in South Carolina will be initiated in fall 2007.

Protocols and Standard Operational Procedures (SOPs) were developed for collecting environmental and soil edaphic information during and after application of methyl bromide alternatives. Parameters measured included soil moisture, soil bulk density, percent moisture at field capacity (-0.3 bars water matric potential), soil temperature, ambient temperature, rainfall, and humidity. Self-contained automated weather monitoring stations were purchased, calibrated and distributed to all cooperators. Equipment was purchased and provided to cooperators for collecting soil samples. Soil samples were processed in at the USHRL, Ft. Pierce for determination of soil moisture, bulk density and percent moisture at field capacity. Equipment was purchased and provided to cooperators for real time estimation of volatile organic compound (VOC) concentrations in the soil atmosphere following fumigation. Calibration standards and operational protocol were developed and implemented to operate VOC meters. Equipment was purchased and provided to cooperators for collecting soil and soil atmosphere samples to quantitatively determine fumigant concentrations. Samples were processed at the USHRL Analytical Chemistry Laboratory in Ft. Pierce. For soil fumigant samples, sample collection and preparation techniques specified in EPA method 5035 followed by gas chromatograph/mass spectrometer methods specified in EPA method 8260 were employed. Soil atmosphere samples were collected using NIOSH

method 2520 Issue 2 for methyl bromide in air except that XAD-4 tubes were substituted for charcoal tubes when sampling soil fumigant applications that included chloropicrin. Protocol was developed for documenting the design and operation of equipment used to deliver soil fumigants in field trials. Protocol was developed for recording the incidence and severity of soilborne pests in methyl bromide alternative field trials. Plastic films used in each trial were collected from the roll prior to application and from the field after application and sent to the USDA, ARS George E. Brown Jr. Salinity Laboratory in Riverside, CA for estimation of fumigant permeability.

Table 1. South Atlantic Region – Core Advisory Committee

Dan O Chellemi	USDA, ARS, US Horticultural Research Lab, Ft. Pierce, FL
Ken Vick	USDA, ARS, National Program Staff, Beltsville, MD
Bob Faust	USDA, ARS, National Program Staff, Beltsville, MD
Sally Schneider	USDA, ARS, National Program Staff, Beltsville, MD
Erin Rosskopf	USDA, ARS, US Horticultural Research Lab, Ft. Pierce, FL
Nancy Burelle	USDA, ARS, US Horticultural Research Lab, Ft. Pierce, FL
Greg Browne	USDA, ARS, Crops Pathology Research Unit, Davis, CA
Stanley Culpepper	University of Georgia, Soil and Crop Sciences Dept, Athens, GA
Frank Louws	North Carolina State Univ., Plant Pathology Dept., Raleigh, NC
Rob Welker	North Carolina State Univ., Plant Pathology Dept., Raleigh, NC
Scott Enebak	Auburn University, Forestry and Wildlife Science Dept, Auburn, AL
Tom Starkey	Auburn University, Forestry and Wildlife Science Dept, Auburn, AL
Gene McAvoy	University of Florida, Cooperative Extension Service, Labelle, FL
Joe Noling	University of Florida, Citrus Research & Education Center, Lake Alfred, FL
Steve Olson	University of Florida, North Florida Research & Education Center, Quincy, FL
Bryan Unruh	University of Florida, West Florida Research & Education Center, Milton, FL
Dan Botts	Florida Fruit & Vegetable Association, Maitland, FL
Reggie Brown	Florida Tomato Exchange, Maitland, FL
Russ Hamlin	Coggins Farms, Inc, Lake Park, GA
Wes Roan	Six L's Packing Company, Inc, Naples, FL
John Stickles	Florida Pacific Farms, LLC, Dover, FL
Ole Nissen	Sunshine State Carnations Inc, Hobe Sound, FL
Dean McCraw	Rayonier Glennville Regeneration Center, Glennville, GA
Victor Lilley	Reddick Fumigants Inc., Williamson, NC 27892
Mark Garrett	Kirkland Sod, Inc., New Smyrna Beach, FL

Table 2. Projects funded in fiscal year 2007 (October 1, 2006 thru September 30, 2007)

Project oversight/administration	Dan Chellemi, USDA, ARS, Ft. Pierce, FL
Plastic permeability testing	Scott Yates, USDA, ARS, Riverside, CA
Eggplant and tomato demo trials	Dan Chellemi, USDA, ARS, Ft. Pierce, FL
Florida strawberry demo trials	Joe Noling, University of Florida
Pepper and cucumber demo trials	Stanley Culpepper, University of Georgia
North/South Carolina strawberry trials	Frank Louws, North Carolina State University
Ornamental trials	Erin Rosskopf & Nancy Burelle, USDA, ARS, Ft. Pierce, FL
Forest tree nursery trials	Scott Enebak, Auburn University
Turf grass trials	Bryan Unruh, University of Florida
Determination of plant back intervals	Stanley Culpepper, University of Georgia
Florida/Georgia educational outreach	Bill Stall & Steve Olson, Univ. of Florida
North/South Carolina educational outreach	Frank Louws, North Carolina State University

Table 3. Demonstration trials of methyl bromide alternatives (January–August, 2007)

Trial	Date	Crop(s)	Location	Contact	Size
1	Jan 18	Tomato	Duette, FL	Chellemi	4.8 acres
2	Jan 18	Tomato	Duette, FL	Chellemi	6.5 acres
3	Jan 27	Pepper/cucumber	Moultrie, GA	Culpepper	4.6 acres
4	Feb 1	Eggplant	Ft. Pierce, FL	Chellemi	4.4 acres
5	Feb 13	Pepper/cucumber	Lake Park, GA	Culpepper	6.9 acres
6	Feb 19	Pepper/cucumber	Ty Ty, GA	Culpepper	6.9 acres
7	Feb 22	Tomato	Beaufort, SC	Chellemi	7.7 acres
8	Feb 22	Tomato	Beaufort, SC	Chellemi	58.0 acres
9	Apr 3	Pine seedlings	Jesup, GA	Enebak	3.8 acres
10	Aug 10	Eggplant	Ft. Pierce, FL	Chellemi	25.0 acres
11	Aug 17	Delphinium	Hobe Sound, FL	Rosskopf	0.5 acres