## SERA003: Southern Region Information Exchange Group for IPM

David Langston, Chair Virginia Tech Tidewater AREC Suffolk, VA 23437

## Meetings and Activities

- March 6<sup>th</sup> annual meeting in Mobile, AL with SE Branch ESA
  - David Kerns, Chair David Langston, Secretary Wendy Britton, Organizer
  - 10 in person, 4 attended remotely
  - Presentations from states
  - update from NIFA
  - Crop Profiles, PMSPs by Robin Boudwin NIPM database
  - Enhancement and Critical and Emerging Issues Grants Danesha Seth Carley
    IPiPE Joe LaForest
  - Priority settings
  - David Langston, Chair and Boyd Padgett elected new secretary
- February 2020 in Charleston with SDAPS (maybe)

# **SERA003 IPM Priorities**

#### Criteria for Selection of IPM Priorities

- 1.Strong stakeholder identified need
- 2.Address economic, environmental, and/or human health issues
- 3. Priority is relevant in two or more states or territories in the Southern Region

Projects with a priority listing address critical IPM issues resulting from:

- 1. Changes in management systems
- 2.Pesticide resistance (chemical or GMO)
- 3.Invasive pests
- 4.Loss of management tools
- 5. Environmental changes

#### SERA003 IPM Priorities - New and Emerging Insect Pests

- Brown marmorated stink bug (Halyomorpha halys), Bagrada and other stink bugs
- Redbanded stink bug (Piezordorus guildinii)
- Spotted-wing drosophila (*Drosophila suzukii*)
- Kudzu bug (Megacopta cribraria)
- Sugarcane aphid (Melanaphis sacchari)
- Spotted Lanternfly (Lycorma delicatula)
- Tropical fruit flies (Oriental fruit fly (Bactrocera dorsalis), Mediterranean fruit fly (Ceratitis capitata), Mexican fruit fly (Anastrepha ludens))
- Neonicotinoid resistant western flower thrips and tobacco thrips
- Old world bollworm (*Helicoverpa armigera*)
- Bt resistant (Helicoverpa zea)
- Bermudagrass stem maggot (Atherigona reversura)
- Crapemyrtle bark scale (Eriococcus lagerstroemiae)
- Emerald ash borer (Agrilus planipennis)
- Tawny crazy ant (Nylanderia fulva), Asian needle ant (Pachycondyla chinensis), and other invasive ants
- Blueberry Gall midge (Dasineura oxycoccana)
- Palm weevils
- Asian longhorned tick (Haemaphysalis longicornis)
- Chilli thrips (Scirtothrips dorsalis)

# SERA003 IPM Priorities - New and Emerging Diseases

- Sugarcane orange rust (Puccinia kuehnii)
- Single Mode of Action Fungicide Resistance
- Alternaria leaf spot of brassicas and head rot of broccoli (Alternaria complex)
- Center rot of onion (Pantoea ananatis)
- Cercospora blight and frogeye of soybean (Cercospora sojina)
- Aerial blight of soybean and Sheath blight of rice (*Rhizoctonia solani*)
- Fusarium wilt of watermelon (Fusarium oxysporum f. sp. niveum)
- Botrytis leaf blight of onion (Botrytis squamosa)
- Cucurbit leaf crumple virus and cucurbit yellow stunt disorder virus (whitefly transmitted virus)
- *Phytophthora capsici* in cucurbits and pepper
- Red bay ambrosia beetle (Xyleborus glabratus) and laurel wilt (Raffaelea lauricola)
- Thousand canker disease and walnut twig beetle (Geosmithia morbida and Pityophthorus juglandis)
- Arthropod borne diseases (eg. Dengue Fever, Chikungunya, West Nile Virus)
- Plectosporium blight of pumpkin (*Plectosporium tabacinum*)
- Cotton Leafroll Dwarf Virus (CLRDV)
- Fusarium Race 4
- Sweet potato nematode (Meloidogyne enterolobii)

# SERAOO3 IPM Priorities – Established Insect Pests

- Red imported fire ant (Solenopsis invicta)
- Bed bug (Cimex lectularius)
- Management of sucking insect pests of soybean, cotton, corn, vegetables, fruit(scales, thrips, whiteflies, stink bugs, mirids, Lygus)
- Community IPM (School, structural, home, and landscape)
- Burrower bug (*Pangaeus bilineatus*) (Peanut in GA, SC, AL)
- Flea beetles (Horticultural crops in GA)
- Cowpea curculio (Chalcodermus aeneus) (GA, AL)
- Aphids, scale, and mealybug management (Horticultural crops, Urban)
- Sweet potato weevil (Cylas formicarius)
- Termites (Formosan (Coptotermes formosanus) and native)
- Stable fly (Stomoxys calcitrans) on pastured and dairy cattle
- House fly (*Musca domestica*) around poultry and dairy operations
- Lesser mealworm, darkling beetle (Alphitobius diaperinus) in broiler operations
- Northern fowl mite (*Ornithonyssus sylviarum*) on laying hens and breeder flocks
- Horn fly (*Haematobia irritans*) on pastured cattle
- Fleas and ticks affecting dogs
- Black Flies
- Varroa mite (Varroa destructor)
- Mosquitos (Aedes aegypti)

#### SERAOO3 IPM Priorities – Established Diseases

- Single Mode of Action Fungicide Resistance (Gummy stem blight of watermelon (Didymella bryoniae))
- Western flower thrips (Frankliniella occidentalis) and tospoviruses (Tomato Spotted Wilt Virus)
- Whiteflies and Tomato yellow leaf curl virus
- Phytophthora Fruit and Crown rot of Vegetables
- Aphids and Cucumber Mosaic Virus
- Thrips and Center rot in onions
- Kissing bugs and Chagas
- Zebra chip on potato
- Wheat diseases (rusts, viruses, head scab, head blight)
- Target spot (Corynespora cassiicola) in cotton (potentially emerging)
- Bacterial Blight (Xanthomonas citri pv malvacearum) in cotton
- Boxwood blight
- Pesticide resistant strains of bacterial spot of tomato
- Early blight of tomato
- Cucurbit downy and powdery mildew
- Corn rusts (Puccinia polysora)
- Aflatoxin
- Plant parasitic nematode management
- Citrus Greening (Candidatus liberibacter asiaticus)
- Cattle fever tick and Babesia bovis

# SERA003 IPM Priorities – Nematodes and Weeds

#### **NEMATODES**:

Plant parasitic nematode management and lack of nematicides

Threshold development

#### WEEDS:

Herbicide resistant weeds

Pigweed-herbicide resistance

Glyphosate resistant Palmer amaranth

Multiple mode of action resistance in Palmer amaranth, water hemp, Italian ryegrass and others - Marestail

Glyphosate resistant goosegrass

Glyphosate resistant Common Ragweed (Ambrosia artemisiifolia)

Glyphosate resistant Parthenium Ragweed (Parthenium hysterophorus)

Giant salvinia (Salvinia molesta)

Aquatic Weeds

Establishing thresholds in pasture-based systems

Development of new detection/mapping techniques and alternative strategies for invasive weed species

Herbicide movement and off-target impacts

#### SERAOO3 IPM Priorities – Other Pests

- Slugs
- Giant African Snail
- Pythons
- Feral Hogs and other wildlife
- Voles
- Use of pesticides for "plant health" without pest presence /scientific validity

## SERAOO3 IPM Priorities – IPM Systems

• Ecological approaches

Crop level approaches - These projects would focus on single crop IPM systems.

Farmscape approaches - These projects would focus on multi-cropping systems within a farmscape to address significant management issues (e.g. stink bugmanagement in a multi-crop landscape).

- Projects that develop IPM system components (e.g. least toxic options, novel management techniques, action thresholds, cover crops).
- Projects that develop IPM programs for emerging crops
- Projects that develop IPM programs to protect pollinators and conserve natural enemies
- Projects that address long term cost/benefit of IPM implementation. Often, sound IPM practices are ignored as a result of perceived short-term economic gain without consideration of long term economic, environmental, or human health detriments. Projects are needed to bridge this disconnect.
- Projects that focus on education and demonstration of the value of scientific decision making in IPM to growers and producers. The most recent need for this is the use of pesticides to correct unspecified "plant health problems" without known pest presence. This specific problem undermines the foundation of IPM and opens the door for further problems.
- Projects that address the needs of Organic/Sustainable IPM systems and stakeholders

#### SERAOO3 IPM Priorities – IPM Evaluation

Projects that improve delivery of IPM information by:

• Creating new resources

Websites webinars and other online training tools Smart phone and tablet apps Decision support tools (in English and Spanish) Pest ID guides (electronic and printed)

- Developing new or improving existing programs
  Distance education
  IPM PIPE-like programs
  - **IPM demonstrations**

#### SERA003 IPM Priorities – Sustainable IPM Infrastructure

The priorities listed are of major concern to southern region IPM programs. These issues should be communicated to university administration, and state and federal government agencies.

- Sustained institutional support for permanent IPM Specialists and Agents
- Train future IPM professionals
- Maintain Southern Region liaison(s) through the Southern IPM Center
- Improve linkages and partnerships commodity groups, pest control operators, crop advisors, and others (governmental agencies such as USDA NRCS and HUD, nongovernmental organizations, and other groups).
- Sustained institutional support to maintain and improve pest diagnostic capabilities
- Improve extension IPM staffing and capabilities
- Enhance Federal and State support for extension IPM and knowledge transfer
- Projects that translate educational materials into other languages to reach underserved non-English speaking audiences
- Projects that emphasize county agent training