

[46] **New uses for PFR-97 20 % WDG from Certis USA to control insect pests of vegetables and fruit in the US.** H. Brett Highland, Certis USA, 1069 Eisenhower Dr, Nokomis, FL 34275. [bhighland@certisusa.com](mailto:bhighland@certisusa.com)

PFR-97 microbial insecticide was registered by the Federal Environmental Protection Agency (EPA) in November of 2011 to control thrips, psyllids, whiteflies, mealybugs and spider mites on fruit and vegetable crops. The registration of PFR-97 gives U.S. growers access to a product that has been widely available to growers in Europe where it is a popular control material for whiteflies and thrips. The introduction of PFR-97 in the U.S. coincides with growers' needs worldwide to effectively control invasive pest species, insects that have become resistant to currently available pesticides, and to effectively manage residue limits and worker reentry intervals.

The active component in PFR-97 is a naturally occurring fungus (*Isaria fumosorosea*). The fungus infects and kills all phases of the target pest—eggs, nymphs and adults—by two routes of infection. The fungus can penetrate the host through direct contact with germinating spores applied to the crop or soil. It can also grow on plant surfaces or in the soil and parasitize hosts that come into contact with it. Regardless of the entry mode, infected insects soon stop feeding and die as the fungus completely fills their bodies, eventually emerging from the dead host to release more infective spores.

The Apopka 97 strain of *I. fumosorosea* was discovered by University of Florida researchers and licensed by WR Grace Biopesticides, a predecessor of Certis USA. It has long been used in Japan, Korea and Europe to control difficult pests in IPM systems that require products that are soft on beneficial insects and mites.

**2:53**

[47] **Venerate™, a new bacterial species of *Burkholderia*, a new bio-pesticide tool for citrus and vegetables.** Tim Johnson, Guy Wilson, Steven Whitesides and Luis Solari. Marrone Bio Innovations, 1721 NE 49<sup>th</sup> Avenue, Ocala, FL 34470. [gwilson@marronebio.com](mailto:gwilson@marronebio.com)

Venerate is the first product slated for commercialization from a novel species of *Burkholderia* designated as *Burkholderia* sp. strain A396. This isolate has no genetic relationship to known pathogenic *Burkholderia* species. *Burkholderia* sp. strain A396 was isolated from a soil sample collected by an MBI employee. It has shown to be active through ingestion and contact of a broad range of insects and certain phytophagous mites. It is non-toxic and non-pathogenic to rats, fish, birds and most beneficial insects. Venerate has shown to offer control on several key pests affecting citrus and vegetable crops. Its efficacy on insect populations resistant to a variety of other insecticides suggests it will have an excellent fit in IPM/IRM programs. Field studies were conducted from 2010 to present on several vegetable and citrus commodities to evaluate Venerate as a foliar spray for efficacy against aphids, whiteflies, twospotted spider mites, citrus rust mites, Asian citrus psyllid and pepper weevils. Venerate applied at rates from 1 to 2 gallons/acre provided encouraging control of whitefly nymphs and adults and Asian citrus psyllid nymphs and adults. These results demonstrate that Venerate will be an important new tool for Asian citrus psyllid and whitefly management on citrus and vegetable crops.

Disclaimer: Venerate, (*Burkholderia*) is not registered for use with the U.S. Environmental Protection Agency or any other agency at the time of publication of this Abstract.

Registration is pending and is expected fall 2013. This Abstract is intended to provide technical information and is not an offer for sale of product.

### 3:11

[48] **Triple Crown™: 3-way turf pest control.** Brian Mount and Dina Richman, FMC Corp, 1735 Market Street, 18<sup>th</sup> Floor, Philadelphia, PA 19103. [brian.mount@fmc.com](mailto:brian.mount@fmc.com)

Triple Crown™ is a new combination insecticide for the control of both surface and subsurface turf pests. The combination of active ingredients provides both speed of control as well as long residual control of many turf pests such as; chinch bugs (both pyrethroid resistant and susceptible), mole crickets, and ants. Grubs (masked chaffer and Japanese beetle) are also controlled with this new combination product.

### 3:29

[49] **Verifi bed bug detection: New data from the field.** Dina Richman, FMC Corp, 1735 Market Street, 18<sup>th</sup> Floor, Philadelphia, PA 19103. [dina.richman@fmc.com](mailto:dina.richman@fmc.com)

The Verifi bed bug detector is the first active monitoring device on the market that can be serviced quarterly. Researchers and end-users have had success detecting low-level infestations that were missed upon visual inspection. New field data will be presented, along with an explanation of how the Verifi detector works.

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### 3:47 - 4:15 Break – Orchid Foyer

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### 4:15

[50] **DuPont™ Exirel™ and Verimark™ insect control: Novel insecticides for crop protection and optimizing yield on vegetables in the Southeast.** James “Shine” Taylor, Stanley S. Royal, Glenn Hammes, Robert W. Williams, Hector E. Portillo, I. Billy Annan and Juan M. Alvarez. DuPont Crop Protection, 510 25<sup>th</sup> Ave. North, St. Petersburg, FL. [james.e.taylor-1@dupont.com](mailto:james.e.taylor-1@dupont.com)

Exirel™ and Verimark™ insect control are novel insecticides based on the active ingredient Cyazapyr™ (DPX-HGW86, cyantraniliprole) that belong to the second anthranilic diamide insecticides discovered by DuPont™. Exirel™ and Verimark™ are the first products in its class of chemistry that control a cross-spectrum of insect pests including Lepidoptera, Dipteran leafminers, fruit flies, beetles, whiteflies, thrips, aphids, leafhoppers, psyllids and weevils, while conserving key predators and parasitoids. Exirel™ and Verimark™ selectively activate the ryanodine receptor in insect muscles resulting in paralysis and rapid inhibition of feeding. Exirel™ has been optimized for foliar use, demonstrating excellent translaminar movement. Verimark™ has been optimized for soil applications to deliver consistent upward root systemicity. Data on the efficacy of Exirel™ and Verimark™ on key vegetable pests, including suppression of disease transmission and other crop benefits will be discussed.