

Summary of Vegetable IPM Activities in 2009

The Vegetable IPM Program in Georgia is very diverse, with educational and research activities addressing over 30 commercially produced vegetable crops within the state. The most recent Georgia Farm Gate Report indicated that over 151 thousand acres of vegetables were grown in 2008, with a total value of about 850 million dollars (<http://www.caed.uga.edu/publications/2009/pdf/AR-09-02.pdf>). Twenty different vegetable crops were produced on at least 1,000 acres each, with four crops exceeding 10,000 acres. Sixteen crops were valued in excess of 10 million dollars each, with six crops exceeding 50 million and 3 exceeding 100 million.

Members of the University of Georgia Extension Vegetable Team with primary responsibilities in vegetable IPM include Alton Sparks (entomology), David Langston (plant pathology), and Stanley Culpepper (weed science). All three individuals have active educational, research/demonstration, and professional programs.

Educational activities conducted by this group are conducted at County, State and regional levels, with primary delivery methods of oral presentations and publications. In 2009, these three individuals gave approximately 33 presentations at County or multi-County level producer meetings (meetings sponsored by the UGA Extension Service) with an average of 30 to 50 contacts at each meeting. Presentations were given in all of the major vegetable producing counties in Georgia, and were customized to address the specific crops grown in each region. In addition, presentations were given at 4 field days in 2009, with over 200 contacts. An additional two presentations were made in cooperation with other Southeastern State's outreach programs. All three scientists also participate in industry sponsored meetings, with six presentations given at local and regional meetings. At the regional level, these three scientists serve as the organizers and backbone of the Vegetable Educational Sessions at the Southeast Regional Fruit and Vegetable Conference in Savannah, Georgia, with eight presentations at the 2009 meeting. This regional conference is the largest of its type in the southeastern U.S. and is attended by growers from throughout the southeast with individuals from 7 to 9 States regularly attending. Presentations at this meeting are generally attended by 50 to 80 attendees. Finally, all three are active in their respective professional societies, with eight presentations given at local, regional or national meetings, and four at international meetings.

Educational publications in 2009, and every year, are highlighted by the vegetable pest management sections of the Georgia Pest Management Handbook, Commercial Edition. The three chapters addressing vegetable recommendations exceed 200 pages, updated annually. These sections are not simply a list of registered pesticides, but are recommendations based on research, demonstrations and field experiences with the recommended products.

Recent additions to this publication include IRAC and FRAC codes for all recommended products to aid producers in resistance management, and annually updated efficacy tables. This publication would not be possible without the active research programs conducted by the Extension Vegetable Team. This Team also participates in the annual production of the Southeastern U.S. Vegetable Crop Handbook. Highlights of the research/demonstrations conducted are also published in the Onion Extension and Research Report and the Georgia Vegetable Extension and Research Report.

All three of the Specialists have active research/demonstration programs. In 2009, 98 research demonstration projects in vegetable IPM were conducted in Georgia by these three extension specialists. Vegetable production is pesticide intensive because of the low tolerance for pest damage and the majority of the research projects are targeted at the introduction and integration of new chemistries into existing IPM programs or expansion of established chemistries into IPM programs of previously unregistered crops. These data form the bases for recommendations extended to growers through meetings and the Pest Management Handbook. These data also serve in developing registration requests through IR-4, Section 18s and Special Local Needs. While much of the research does address conventional pesticide use, alternative management strategies are also investigated including research with host plant resistance (e.g. Tomato Spotted Wilt Resistance evaluations in pepper and tomatoes, B.t. sweet corn evaluations), cultural controls (e.g. planting date effects on pests occurrence, use of various plastic mulches effects on efficacy of fumigants), application methodology (e.g. oil injection in sweet corn ears, herbicide use under plastic mulch as a fumigant alternative) and resistance monitoring/management.

Research and educational efforts within vegetable IPM have ongoing impacts with the vegetable industry. Identification of efficacious pesticides, aiding in registration of these pesticides, and integration of these pesticides into IPM programs are among the most notable and obvious impacts. As an example, six new herbicide labels for pepper, cole crops, and onions were received in 2009 and these products were successfully integrated into the production programs for these crops. Research and education with methyl bromide alternatives has aided growers in shifting to alternative practices, with over 70% of crop acreage previously reliant on methyl bromide now produced with alternative approaches. This work has also resulted in identification of a non-fumigant alternative to methyl-bromide which is currently being further evaluated. A final highlight of the Vegetable IPM program is resistance monitoring and management. The extensive pesticide work conducted not only identifies new efficacious pesticides, but serves to monitor for pesticide resistance. This work proves invaluable to growers as resistance, and lack of resistance, information presented throughout the year. This aids growers in adjusting their control programs season-to-season

and reduces the chances of dramatic yield losses that can occur with poorly controlled pest problems.