Vegetarian Newsletter

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Eat your Veggies!!!!!

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Extension Programs Help Suwannee Valley Vegetable Growers

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Increased concern over the impact of agricultural practices on water quality in Florida has resulted in the grower’s need to adopt Best Management Practices (BMPs). The successful adoption of BMPs in plasticulture production of vegetables in North Florida has been greatly facilitated by Extension programs in conjunction with industry and other agency involvement. This collective group is known as the Suwannee River Partnership. Growers are more likely to adopt BMPs when they can evaluate them on their own farm. Long term educational program efforts including hands-on teaching workshops at the North Florida Research and Education Center – Suwannee Valley combined with on-farm demonstrations proved to be a very effective strategy in helping vegetable growers using plasticulture to improve water and nutrient management practices.

Many vegetable growers in the Suwannee Basin region of North Florida have adopted drip irrigation and plastic mulch over the past twenty years to produce vegetable such
as tomato, bell pepper, eggplant, cucumber, squash, muskmelon, and watermelon. Soils in the area are sandy with low water holding capacity (<10%) and low organic matter content (<1.5%). The increase in production costs has also emphasized the need for improved irrigation practices and a better understanding of water movement in mulched beds. Growers’ understanding of the interdependence between fertilization, irrigation, and nutrient leaching below the root zone was increased through a targeted effort supported by USDA, Sustainable Agriculture Research and Education (www.sare.org) on-farm project.

UF/IFAS county extension agents and specialists have been working with Suwannee Valley’s vegetable growers who use plastic mulch and drip irrigation to refine their management of the technology since it was introduced to the region in the late 1980s. The emphasis of the educational program in the past 5-10 years has been to improve efficiency of water and nutrient management. The educational approach was to first demonstrate the new technology at the Center via field days and workshops, then follow-up by demonstrating that technology on grower’s fields throughout the region.

Educational efforts have included: on-farm demonstrations using soil moisture sensors, Florida Drip Irrigation Schools, plant sap measurements, mobile blue dye injection to show growers the movement of water in the soil profile.
The most recent and perhaps most popular demonstration that was taken to 20 area farms was the use of blue dye injected into the irrigation system to see how quickly the water moves downward in the soil in their field. The blue dye is used to be able to actually visualize the wetting pattern under the drip tape. After injection of the blue dye, growers followed their normal irrigation schedules for one week and then a cross section of the soil profile under the mulch was dug to measure how far the water and nutrients moved.
The growers showed great interest in using new technology such as moisture sensors and Cardy meters, and seeing the movement of dye on the “digging” visits. It was very common for growers to make immediate changes in irrigation schedules, especially irrigation event durations early in the season based on what they observed. The greatest challenge in managing the leaching from over irrigation occurred in the early part of the season, weeks 1-5 after planting.

The combination of these educational programs has resulted in:

- better long term understanding of water and nutrient movement in a plasticulture system;
- reduced leaching of fertilizer;
- reduced total fertilizer used saving money;
- more efficient irrigation delivery reducing pumping fuel costs, reducing water withdrawal, and reducing nutrient leaching;
- adoption of long term best management practices (BMPs).