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Growers of organic crops must resort to innovation while adhering to a strict list of permitted production materials and techniques.

Taking an organic slant

By Bill Barksdale

Dean Diehl had doubts about organic farming until recently. In a nutshell, he considered it an unrealistic approach that wouldn't last.

Things have changed. While conventionally produced tomatoes remain Diehl's main crop, he also grows organic these days. Organic tomatoes are his emphasis, but he grows organic peppers and cucumbers, as well.

Diehl, of D.G. Diehl Farms in Ruskin, Fla., is modest and noncommittal about his involvement in the organic industry. He began this aspect of his enterprise only in 1999 and admits, "I have a lot to learn."

What is behind this grower's revised viewpoint about organic production? It's a combination of

factors, but his interest hinges to a large degree on current regulatory trends.

Organics on the rise

"With the approaching loss of methyl bromide and possible removal of other conventional production tools, all growers probably should be looking at the goal of using more sustainable, more environmentally friendly techniques," he says.

Through his involvement with organic production, Diehl is getting familiar with a partial substitute for methyl bromide. He uses SuperBio as a preplant treatment in the bed. "While I have no data to support my opinion, I believe this helps the crop in several respects," he says.

SuperBio is a biological product and provides no pathogen control. However, its microbial content colonizes crop roots and adjacent soil. Through the exclusion process, these heavy populations of beneficial microbes make it more difficult for harmful organisms to attack the plant, explains David Waddy, with UAP Florida.

SuperBio enhances nutrient availability

SuperBio also enhances the breakdown and availability of materials applied to supply plant nutrients. "Even though these fertilizer products must be of an organic nature for organic crops, they still must be converted to plant-available forms," Waddy explains.

Above > Cucumbers are one of three crops in Dean Diehl's organic production program. He also grows tomatoes and peppers organically, although conventional tomatoes remain his primary crop.

Organic facts

- > Organic farming is more sustainable and more environmentally friendly.
- > Pest control is a key challenge for organic growers.
- > Organic foods represent at least 1 percent of retail food sales in the United States.
- > Estimated annual sales of organic foods exceeds \$7 billion in the United States.

While SuperBio looks promising, Diehl realizes that it has no weed control effect. "We have to address this concern in other ways," he says.

Pest control is one of the key challenges facing organic growers. Diehl often refers to the list of approved crop protection products and methods published by the Organic Materials Review Institute. He uses several "botanicals" approved for organic food and fiber production. In addition, he relies more on beneficial insects such as lacewings to control some pests.

So far, pepper weevil is one of his greatest challenges. "This pest is hard to control in conventional peppers and even more difficult in an organic crop," he says.

"Florida is probably one of the toughest places to grow organics because of our climate and pests," he says. "In California, the leading state in terms of organic crop volume, they have lower humidity and less disease pressure."

Innovation required in organics

If a single word describes the required philosophy to grow organic crops, it might be "innovation." "You have to adjust to doing things differently," says Diehl. "While there are some very specific rules to follow in order to have certi-

fied organic products, there isn't a long history of how to get there.

"It's not like you can decide one day to grow organic. First, you need to know how to do the job using conventional products and methods. Next, you have to be innovative enough to learn how to make it work organically. There's definitely a learning curve to this business."

While the risks facing an organic producer are greater than for conventional, potential rewards exist. Organic crops typically bring a premium, and prices tend to be more stable than for conventional produce.



Above > Diehl (right) reviews progress of organic cucumbers with David Waddy of UAP Florida.

Diehl markets his organic products, labeled as Real Diehl Organics, through two firms. He is a partner in Sarasota-based Global Organics, and he also markets through Tomatoes of Ruskin, a long-



established firm in the tomato industry. Like other Florida organic growers, he enjoys distribution throughout the United States plus international markets such as Japan and Europe.

Under provisions of the Florida Organic Farming and Food Law, established in 1990, growers must be certified before selling their production as organic. Diehl is a member of Florida Organic Growers, a nonprofit organization that inspects and certifies organic farming operations on an annual basis. ■

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Above > Because they use no conventional fungicides, organic growers often remove diseased plants, as shown in this tomato field.

Organic farming in Florida

Organic farming excludes the use of synthetically compounded fertilizers, pesticides and growth regulators. Approximately 100 commercial growers produce organic crops in Florida, from Homestead to the Panhandle. They grow at least 100 different crops on an estimated 10,000 acres, according to Marty Mesh, executive director of Florida Organic Growers in Gainesville.

Organic foods represent at least 1 percent of U. S. retail food sales and are the fastest growing segment of the retail market. Estimated annual sales of organic foods exceeds \$7 billion in the United States. Organic industry growth has hit 20 percent or better annually for nine consecutive years.

Most organic growers use green manure crops, which are turned into the soil well before planting. Such crops include rye, ryegrass, oats and wheat in the winter, and southern peas, millet and hairy indigo in summer. Composted animal and plant materials are also used extensively.

Organic and natural fertilizers are made from bone meal, blood meal, crab-waste compost, horse and chicken manure, mushroom compost, feathers and other natural substances.

The primary difference between organic and inorganic fertilizers is that inorganic exists in a readily available nitrate state. Soil microbes must convert organic fertilizer materials to an inorganic form before crop roots can absorb them.

Organic growers strive to maintain plant health by minimizing stress and using resistant varieties when available. Weed control is accomplished through mulching and hand labor and reduces habitat for insect pests and plant pathogens.

Removing diseased plants during the growing season and turning under old crop plants promptly following harvest reduces chances of insect and disease carryover. Insect control is also achieved with natural products such as pyrethrins, rotenone, ryania, insecticidal oils and soaps.