Organic Market Soft for Arizona Growers

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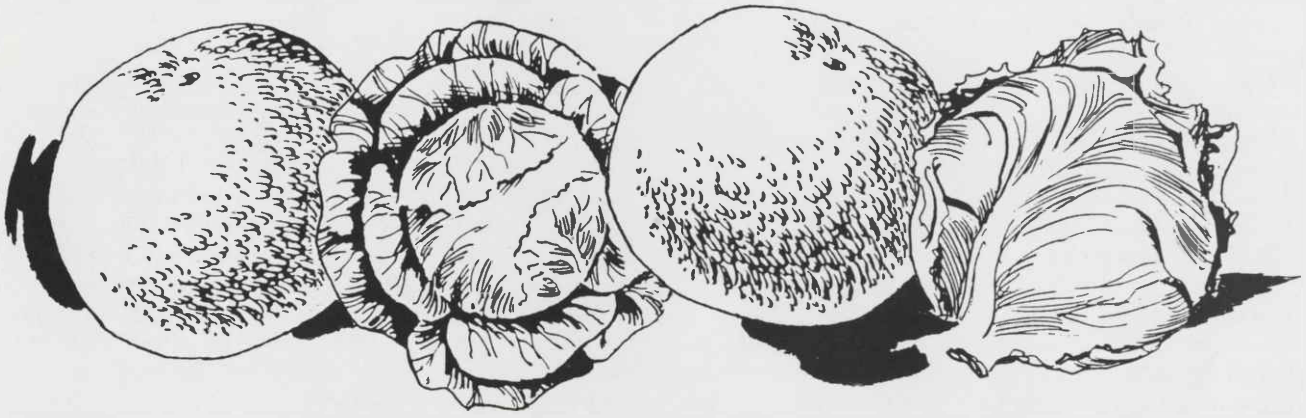

BY LORRAINE B. KINGDON

As far as many commercial growers are concerned, growing fruits and vegetables with fewer chemicals is a trend in search of a market. Growers say they are aware of the need, but they often are frustrated by consumers who say one thing and buy another. Growers also are frustrated by a lack of information—a road map to organic success does not exist. (*See related story.*)

Both growers and university scientists agree. The organic trend is real, although identified by a confusing multitude of names: low-input sustainable, ecological, regenerative, non-toxic, alternative or organic agriculture. In general, instead of using chemical pesticides and fertilizers, growers substitute biological insect and disease controls, intensive management and crop rotation, changed tillage methods, and often, increased hand labor.

"When commercial growers go organic, they have to solve pest problems early in the game," says Marvin Butler, University of Arizona Cooperative Extension agricultural agent in Yuma County. "They can't make mistakes. Using chemicals makes it easier and more convenient to play catch-up with pests.

"Neither growers nor consumers are quite ready for organic produce," he says. "We had a big push a year ago, but many growers have backed off because the consumers weren't buying. They want top-quality produce at the same price they're used to paying, and that makes it tough."

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Finding Alternatives to Chemicals

ALLAN FERTIG

John McGrady uses a spectrophotometer to evaluate nitrate levels in lettuce.

In Yuma, Ariz., the state's winter vegetable capital, University of Arizona scientists are developing that road map to help growers raise produce using fewer chemicals. Research also is under way in Central Arizona and at the UA campus in Tucson. The Arizona Iceberg Lettuce Research Council has committed more than $60,000 to five UA projects.

Lettuce receives high levels of pesticide treatment because consumers demand perfection. Late fall lettuce crops that grow during warm months are especially susceptible to insect infestations.

A UA multidisciplinary team is developing a sustainable lettuce production system, and evaluating interactions among insects, diseases, the soil, and vegetable quality and yields. The team is concentrating on head lettuce quality, particularly its tendency to accumulate nitrates, says team leader John McGrady, plant research scientist in Yuma. He is working with Butler; Michael Matheron, plant pathologist; Michael Rethwisch, integrated pest management specialist; and research assistants Joe Matejka and Phil Tilt.

In 1989, the first of four years of tests, the team tested various fertilizers on three plots of lettuce. One was fertilized with conventional chemicals, and the other two plots were fertilized with high and low amounts of cow manure. All plots received liquid chicken manure extract as a soil conditioner.

McGrady says more lettuce was harvested from plots receiving the conventional fertilizer, but the added chicken manure conditioner resulted in heavier lettuce heads. Nitrogen and nitrate levels were significantly higher in chemically fertilized lettuce.

Last year, Rethwisch monitored the three plots for infestations of leafminers to see whether the insects were influenced by the change in lettuce color and nutrient balance caused by organic fertilizers. The leafminer, first documented in Arizona in 1988, caused losses estimated at $75 million to Yuma-area lettuce crops in 1989.

Rethwisch found no differences among the plots, but the lettuce plots were planted late, which may have affected the results. He will repeat the research again this year.

In a second project, Rethwisch and McGrady are evaluating various oils as controls for the leafminer, and looking at whether oil on leaf surfaces affects photosynthesis.

In another Council-funded project, UA plant pathologists Matheron and Michael Stanghellini will investigate controlling root-infecting fungi with environmentally safe methods. First, they will fumigate soil and then add known beneficial microorganisms to the soil to keep pathogens from returning. Stanghellini says the combination of fumigation and beneficial insects is a symbiosis of existing technologies that is yet to be tried.

—Lorraine B. Kingdon

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Steve Martori found growing chemical-free cantaloupes easier than selling them. But the insight Martori Brothers Distributors of Scottsdale, Ariz., gained in the last two years made the organic experiment on 100 isolated acres near Aguila, Ariz., worthwhile.

Today, Martori raises melons on all of the Martori Brothers' 5,500 acres around the state without using insecticides. He also discovered mildew can be controlled using lesser amounts of fungicide. But all the melons are sold on the regular market.

In 1988, the publicity about Alar on apples and cyanide in Chilean grapes moved some of Martori's supermarket customers to sell organic produce.

Martori's Aguila field, 26 miles west of Wickenburg, Ariz., was the ideal place to grow organic melons. The field was isolated, unthreatened by pesticide drift, and the previous soybean crop had not needed pesticides. A nearby cotton gin provided mulch and fertilizer for 50 acres, and the remainder was fertilized with composted manure.

The melons were outstanding. The market was miserable. Martori sold two-thirds of his July 1988 crop on the regular market, not as organic produce.