

Adding OOMPH to Organic Farming

America's appetite for all-natural, organic food has grown at the remarkable rate of over 20 percent annually for the past 10 years. This makes organic agriculture—farming and processing food without the use of synthetic chemicals, such as synthetic pesticides and many inorganic fertilizers—the fastest growing sector of America's agricultural economy. Contrast that to the scarcity of organic items to be found 20 years ago . . . and those only in specialty shops. Today, organic selections are as easy to find in conventional supermarkets and mainstream stores as in natural food stores.

In fact, mainstream stores altogether account for 49 percent of organic retail sales, just exceeding the 48 percent logged by natural food stores. Organic items are flourishing in other, direct venues, including farmers' markets, farm stands, roadside stands, farm subscriptions, and mail orders. In all, commerce from this array of diverse outlets, large and small, puts America in first place internationally in total organic sales.

The amount of land exclusively dedicated to raising this bounty has also changed. Registered organic land more than doubled in the United States during the 1990s. And the transition of conventional fields to strictly organic farmlands continues. In this process, fields are managed organically for 3 years to qualify for certification.

Over the years, organic farmers have closely followed the findings from ARS studies, in particular those on weed management, soil fertility, biological pest control, and integrated pest management. Much of ARS' research already aims to increase use of on-farm resources and decrease use of chemicals. For the most part, however, those studies have been done on conventional—not organic—farming systems.

But that's changing. Organic studies—from production to processing—are increasingly a formal part of ARS efforts and can benefit both types of farming systems. In 1998, Congress paved the way for more organic investigations by authorizing an organic farming bill. Some collaborations were already in place between organic farmers and ARS specialists and, in many instances, their university colleagues.

Today, more than 60 ARS scientists are conducting organic farming research. Notably, these studies are on organically certified fields. These experts have consistently made themselves available to local growers for help and advice.

For example, our researchers in Corvallis, Oregon, are working with organic growers to quell plant diseases. This collaboration is experimenting with compost teas. These teas are made by adding water to organically approved compost and allowing the mix to steep, somewhat like adding water to

tea leaves. The mix is then strained, and the resulting tea-colored liquid is sprayed on foliage. The teas may help zap Botrytis rot that attacks leaves of blackberries and ornamentals such as roses and geraniums.

Some other examples of ARS' organic research:

- Scientists at Salinas, California, responded to the needs of local organic strawberry growers with some first-ever studies. The researchers compared commercially available strawberry varieties grown only on fields managed organically. The work was needed because organic growers can't use the methyl bromide fumigant, familiar insecticides, and herbicides available to conventional growers.

- A plant pathology team at Parlier, California, provided help and advice to local organic growers about postharvest diseases. In one effort, the scientists studied packinghouse equipment and treatments to control green mold of citrus. This team also worked with organic growers on postharvest diseases of other fruits, including peaches, grown in the San Joaquin Valley.

- ARS scientists at Fort Pierce, Florida, played a pivotal role in developing a multiagency group to which Florida's organic growers can turn for help. In current studies, the Fort Pierce team is working with local organic growers to enhance weed and disease control on their vegetable farms. They are experimenting with novel cover crops, paper mulches, soil solarization, and biological control agents.

There's more. You can get a glimpse of current investigations by turning to page 4 of this issue. We highlight studies aimed at controlling weeds, boosting plants' nutrition, sidestepping a soybean disease, and strengthening the production of organic beef.

To ensure that ARS' organic farming research meets growers' needs, we've established a strong working relationship with the Organic Farming Research Foundation. This organization conducts surveys and meetings to determine the research priorities of America's organic farmers.

Increasingly, that research will use today's leading-edge technologies. Global positioning systems, for example, enable growers to customize use of water, fertilizer, and biological control agents from one corner of their field to another. And new information about the genetic makeup of plants, animals, and microbes can be used by tomorrow's organic growers to boost production in environmentally friendly ways.

In the coming months, we will post a new web site on ARS' organic farming research.

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