

STRAWBERRY FIELDS FOREVER?

Local strawberry industry faces uncertain future as methyl bromide alternatives fall short



DAN COYRO/SENTINEL

Dan Legard, director of research for the California Strawberry Commission, handles the growing medium made of coconut coir at a two-acre test plot near the Monterey Bay Academy off of San Andreas Road.

Agriculture

By DONNA JONES

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WATSONVILLE — Scratch the soil of the strawberry fields that stretch for miles across the Pajaro Valley and you'll find one of the biggest challenges for farmers: plant-destroying pathogens that can cut into productivity and profits.

For years, growers have fought disease with methyl bromide, a fumigant that sterilizes the soil before planting.

But after decades of deployment, methyl bromide has been linked to ozone-depletion in the atmosphere and it's on the way out. Alternatives, developed at the cost of tens of millions of dollars, have fallen short of matching its effectiveness.

That's why this week's news that Tokyo-based Arysta LifeScience Corp. was withdrawing the controversial fumigant methyl iodide from the U.S. market shocked growers.

Methyl iodide, marketed under the name Midas, wasn't a perfect option, as restrictions



STRAWBERRIES

SANTA CRUZ COUNTY

ACRES: 3,317

PRODUCTION: 129,330 tons

VALUE: \$197 million

STATE

ACRES: 38,600

PRODUCTION: 12.9 million tons

VALUE: \$1.9 billion

SOURCE: 2010 SC County Crop Report, Department of Food and Agriculture

LEFT: UC Santa Cruz researchers Carol Sheenan and Joji Muramoto grow berries in soil mixed with rice bran at the test plot near Monterey Bay Academy.

STRAWBERRIES

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limited its reach. But as time runs out on methyl bromide, Midas offered farmers the hope of an effective replacement.

"There won't be anything as good as (methyl bromide)," said Tom AmRhein, a veteran Pajaro Valley strawberry grower and an executive with Salinas-based Naturipe Berry Growers. "We've spent enough years and time and money on this thing to know you are just not going to be able to have that level of production and quality that you have now."

TOXIC FIGHT

Methyl iodide foes, who worried about the risk to farmworkers, rural communities and groundwater, hailed Arysta's decision as a victory for public health and the environment, a chance to re-create agriculture in a safer, more sustainable model.

"Now is the time for California leadership to seize this opportunity to help farmers transition away from the fumigant pesticides generally, and toward cutting-edge agriculture," said Paul Towers, a spokesman for Pesticide Action Network.

Methyl iodide has been linked to fetal deformity, miscarriage, thyroid disease and cancer.

Its toxicity persuaded dozens of scientists, including several Nobel Laureates, to object when the federal Environmental Protection Agency sanctioned its use in agriculture in 2007. Reviewing it for California use, the chairman of a state panel, John Froines, a professor of environmental health science at UCLA, called it "one of the most toxic chemicals on Earth."

But in December 2010, in the final days of Gov. Arnold Schwarzenegger's administration, methyl iodide was registered for use in California by regulators who said the stringent restrictions they imposed would ensure safety. A lawsuit seeking to overturn the decision soon followed — litigation the plaintiffs appeared poised to win, at least in the first round.

California strawberry growers, meanwhile, expecting opponents to pounce on anyone seeking a permit to apply methyl iodide, weren't buying.

Arysta concluded the product was not economically viable in the U.S. marketplace, though the company plans to continue sales in other countries. AmRhein said that decision not only puts methyl iodide out of reach, but likely will stymie other research.

"The days of innovation in fumigants are drawing to a close," he said.



Ongoing research by the California Strawberry Commission in Watsonville shows promising results for growing berries in 100 percent coconut coir, which discourages strawberry plant pathogens.

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"Politically, in California, it's a fight people don't want to fight."

SO WHAT?

Strawberry growers don't expect any immediate impact. They've been making do with diminishing methyl bromide supplies for several years now, substituting less effective chemicals.

Methyl bromide is being phased out under an international treaty known as the Montreal Protocol. Developed countries were expected to eliminate its use by 2005, developing countries by 2015. But the global agreement allows for exemptions when feasible alternatives are not available, though a smaller amount is permitted every year.

In 2012, international agreements call for use in the United States to drop to 4 percent of 1991 levels. Next year's permitted levels will be slightly more than half that.

Methyl bromide is used in other crops as well, including tomatoes and cane berries.

In Santa Cruz County, growers used less than half the methyl bromide in 2010 that they used in 2009, according to data from the state pesticide regulation department.

But one reason viability is being maintained so far with less effective tools is the residual effect of years of methyl bromide treatments, AmRhein said. He compared it to a person who has worked to get in shape.

"If you get lazy, you don't get fat overnight," he said. "In a couple, two or three crop cycles, then you have problems."

In the long run, soil-borne pathogens will build up in soils, AmRhein said, and that will lead to lower productivity in fields and higher prices for consumers. For a half-century or more, strawberries have shaped the landscape in South County, socially and economi-

cally. Combined with other pressures on farmers, such as water and air quality regulations, rising fuel costs and foreign competition, he said, the lack of a potent fumigant could affect a range of issues, from crop choices to land values, now propped up by the ability to grow a high value product like strawberries.

People can't expect things to stay the same when conditions change, AmRhein said. As Pajaro Valley farmers shifted from apples to berries in the past 30 years, people lamented the loss of the trees.

"Well, it's economics," AmRhein said. "Between China and different places, you couldn't keep Coastal California in apples. Thank God there were berries to pick up the slack."

WHAT'S NEXT?

Some say organic production is the future for agriculture. Nationwide, it's a \$30 billion industry, and growing at a faster clip than conventional farming, according to Cathy Calfo, executive director of California Certified Organic Farmers.

Founded in 1973 in Santa Cruz, California Certified Organic Farmers is the nation's oldest and largest organic certifying agency and it's watched the sector blossom from fringe to mainstream.

"It's possible for anybody (to make the switch)," said Jake Lewin, California Certified Organic Farmers's chief certification officer. "Every commodity where people said it can't be done, it's being done."

According to the 2010 Santa Cruz County crop report, more than 90 organic farmers are growing on more than 1,600 acres — 30 percent of the county's total acreage in fruit and vegetables.

Still with a total value of about \$26 million, according to the crop report,

organic production represented a fraction of the county's total agricultural value of more than \$500 million in 2010. Strawberries, the top crop, accounted for \$197 million of the total.

Conventional growers say organic farmers can't match their volume. Carolyn O'Donnell, spokeswoman for the California Strawberry Commission, questioned whether there was enough farmland to make strawberry production viable using only organic methods. For one thing, rotation requirements, she said, would put land off-limits in some years.

Strawberries would no longer be the plentiful and affordable product consumers know now, AmRhein said.

The commission, which spends about \$1.5 million each year investigating fumigant alternatives, is putting its efforts into finding new production techniques. Several research projects are being carried out on a small plot overlooking the Monterey Bay off San Andreas Road. One is looking at using alternatives to soil, such as peat and coconut fibers. Another is exploring using mustard seed meal to suppress pathogens and encourage the growth of beneficial microbes. A third incorporates rice bran into the soil to create anaerobic conditions that are unfriendly to pathogens.

The experiments haven't led to a solution yet, said Dan Legard, the commission's research director, though there's "promise." But growers need more than a maybe, he said. With \$20,000-per-acre up-front costs, a grower can't afford to lose a field of strawberries to disease.

O'Donnell said there's no one-size-fits-all solution.

"We need all the tools in our toolbox," she said.

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