



## Marrone takes latest biotech firm to market faster than first

**Startup lines up new investor after launching first herbicide**

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A new product that causes plants to shrivel and die is helping startup Marrone Organic Innovations Inc. to thrive.

Less than a year after starting business, the Davis company is launching its first product, a weed killer trademarked GreenMatch O.

Marrone Organic Innovations has started selling the herbicide for organically grown crops to Fresno-based wholesaler Monterey AgResources, which packages and sells the weed killer to pesticide distributors and farmers.

A Georgia company developed the technology and licensed the rights to Marrone Organic.

Company founder Pam Marrone said she expects sales of \$100,000 this year, and the market could reach \$10 million eventually. "It's a good first step into the market," Marrone said.

She said the biotech company has lined up a lead investor for a financing round of \$1.5 million or more. She would not disclose the name of the investor.

Jerome Pier, the agronomist for the Central Valley division of pesticide distributor Western Farm Service Inc. in Fresno, said he has

tried GreenMatch O.

"It works," he said. "This does have potential. Growers are asking for it, and salesmen are asking for it for their customers."

Most organic farmers weed by hand, burn weeds with propane torches or mow to control pesky plants. They'll spend less using GreenMatch O, Marrone said.

The herbicide is made from a citrus extract called d-limonene that strips the wax off the leaves of plants, causing them to shrivel and die. Other organic pesticides use vinegar, which Marrone said can be very caustic.

University of California weed specialist Tom Lanini said GreenMatch O knocked back weeds by about 80 percent to 90 percent in two studies he conducted on the winter weeds mustard and fiddleneck. But the weeds did grow back from the remaining tissue.

"I think it works pretty well," Lanini said. "It's equivalent or maybe slightly better than the current products available. I wouldn't say it's light-years ahead, but it's better."

At \$150 per acre, GreenMatch O is twice the cost of Roundup, its conventional counterpart. But certified organic farmers can't use the manmade chemical.

GreenMatch O has U.S. Environmental Protection Agency registration, but the state EPA has not approved its use in California. Marrone said sales will start in the Pacific Northwest, and she expects to start selling it in California by early next year.

Marrone founded Davis biopesticide manufacturer AgraQuest Inc. in 1995 and left the company in April. AgraQuest needed several years to

start selling its first products, and her ownership share became heavily diluted through the years as the company brought in new investors.

Marrone Organic targets different markets than AgraQuest and won't compete directly. AgraQuest makes biopesticides for treating fungal diseases and pest insects.

Marrone Organic, which has six employees, took a much shorter track to market its first product than AgraQuest had.

A smoother and more predictable EPA approval process for biopesticides has helped, Marrone said. She headed an industry group that persuaded EPA officials to adopt regulations requiring the agency to finish evaluating the safety of biopesticides for gardening and landscaping in one year and for crops in 1.5 years.

Cutting Edge Formulations Inc. of Buford, Ga., developed the technology and licensed the rights to market GreenMatch O in the western United States, Canada and Central and South America to Marrone Organic in 2006. Cutting Edge had already applied for U.S. EPA approval when the owners contacted Marrone.

Contracting out marketing has also helped speed the product to market for less than it would cost to employ a sales team.

"My AgraQuest experience told me how difficult it is to find good salespeople," Marrone said. "Managing a sales force takes a lot of time."

She owns 60 percent of Marrone Organic, which she hopes will become profitable in 2009 or 2010.

Some of the company's \$650,000 seed money was provided by operations and finance vice president Julie Morris, who previously worked as a senior manager of corporate development for Agilent Technologies Inc., and University of California Davis management professor emeritus Richard Dorf.

The company's next product will be a pre-emergent natural herbicide licensed from a retired U.S. Department of Agriculture scientist. Pre-emergents kill weeds as they sprout from seed.

Marrone said the second weed killer could break into the conventional pesticide market if the company can lower the cost.

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