

# Bloomberg Businessweek

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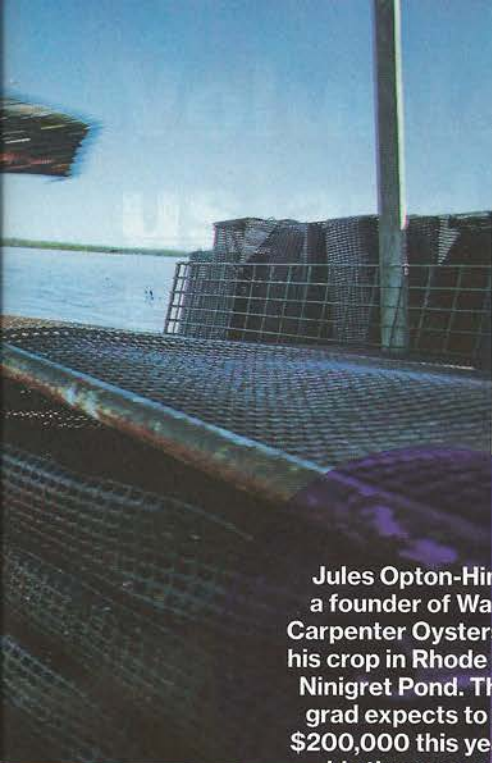
The \$96 Billion Hack

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**Jules Opton-Himmel, a founder of Walrus & Carpenter Oysters, tends his crop in Rhode Island's Ninigret Pond. The Yale grad expects to pull in \$200,000 this year from his three-acre plot**



says Michael Cressotti, corporate chef at Manhattan's three Mermaid Inn restaurants, which sold just over 1 million oysters last year, up 25 percent from 2010. "You're tasting the region and salinity of the water, just like the terroir of a wine, where you can taste the soil and the grapes."

Barriers to entry for would-be oyster farmers are few. Leases go for less than \$200 an acre on publicly owned shoreline in the Northeast, says Bob Rheault, a marine biologist who runs a lobbying group for East Coast shellfish farmers. Laboratory-spawned seed costs about \$5,000 to \$10,000 a year, while the perforated PVC pouches that hold the oysters and the racks that anchor them to the sea floor run a few thousand dollars an acre. The rest is sweat equity. The av-



erage oyster is handled 10 times before it gets to market, and days on the ponds can reach 14 hours. Farmers must tend the racks to remove seaweed and algae that can choke off the flow of water, and they need to patrol for natural predators such as crabs. Though only about half of the crop makes it to market, the payoff can be rich. Opton-Himmel estimates his three acres will yield 250,000 oysters this year, a harvest worth more than \$200,000.

The oyster renaissance would not have been possible without government regulation, in particular the Clean Water Act, which over the past few decades has erased much of the pollution that parasites and bacteria deadly to oysters thrive on. Shellfish valued at \$113 million were farmed on the East Coast in the 2010-11 growing season, Rheault says, up from \$93 million in 2009. About 40 percent of that came from oysters, with clams and mussels making up the rest. Connecticut was the largest shellfish farming state, producing 29 percent of the harvest. Virginia followed with 25 percent, and Rhode Island accounted for some 2 percent, worth about \$3 million, according to the state's Coastal Resources Management Council.

Virginia and Louisiana produce the bulk of the commercial oyster supply: the stuff sold by the gallon for frying and stews. But the real money is in live oysters, shucked by hand and served on the half shell. Diners in Boston and Chicago want larger oysters, while New Yorkers prefer their shellfish petite, a better business proposition for growers. "If I can get the same price for a 3-inch oyster as for a 5-inch oyster, but a year earlier with that much less risk, it's a wonderful thing," says Rheault, who farmed 17 acres of oysters before packing up his waders three years ago. "It's the greatest job in the world in the

summer," he says. "And then in February, when you are 55 years old and standing in an open skiff and you come home and everything hurts because you spent the whole day busting ice, it isn't."

Colby Doyan shucks shellfish at the Matunuck Oyster Bar, a high-end fish shack near Ninigret Pond that serves nine local varieties. The 20-year-old college student is pondering names for the farm he wants to start. He's partial to "Quanty Queens," while an older customer says she likes the sound of "Colby's Clams."

"The catchier the name, the more selling power," says Mermaid Inn's Cressotti, who believes there's room for more local suppliers as long as they can reliably deliver 500 oysters a week. Mermaid Inn has developed an iPhone app called Oysterpedia that lets diners consult tasting notes for more than 150 varieties. The fashion today is for mixed plates, so diners can try several breeds. "The days of having just a plate of Malpeques are over," he says, referring to a popular meaty oyster from Canada's Atlantic Coast. —Peter S. Green

*The bottom line* Cleaner waters and demand from foodies have helped boost East Coast oyster production by 20 percent annually.

## Pest Control

### Killing Bugs by Painting Your House

▶ A Spanish company fights malaria with pesticides in house paint

▶ "The primary problem for half the planet is that their homes are sick"

For decades, nets and sprays have been the only effective methods for controlling the mosquitoes that cause malaria and dengue. Pilar Mateo thinks she can do better. The Spanish chemist has invented a way to embed pesticides in



microcapsules stirred into house paints at her Valencia company, **Inesfly**. The insecticides are released from the paint slowly, remaining effective for two to four years, while sprays typically need to be reapplied at least every six months. "The paint acts like a vaccine for houses and buildings," she says.

Mateo says she's received offers to buy her patent but refuses to sell out. Instead, her new venture, **Inesfly Africa**, will produce it commercially at a €10 million (\$13 million) factory in Ghana. After years of donating paint to poor people in Latin America and Africa, Mateo wants the venture to fund her broader humanitarian efforts. "It's not just the insects that are the problem," she says. "It's the poverty."

The minute amounts of pesticides released from the paint aren't harmful to people but are devastating to insects, according to independent tests by scientists. The paint is already approved for use in 15 countries, including China, Germany, and Spain. Mateo is seeking approval in the U.S. and a recommendation from the World Health Organization. Her idea is to sell it as an affordable alternative to sprays. "It makes sense," says Adriana Costero-Saint Denis, a program officer at the National Institutes of Health. "You want something that has slow release, which is effective for a long period."



**"It's not just the insects that are the problem," the Spanish entrepreneur says. "It's the poverty."**

Mateo didn't plan to spend her life killing bugs. While earning a Ph.D. in chemistry from the Universitat de València, she settled into a comfortable routine, tinkering with formulas at her father's paint factory, **Industrias Químicas Inesba**. In 1988, inspired by a newspaper article about a local hospital overrun by cockroaches, she shifted to pest control and developed her microencapsulation technology, patenting it in 1996. A Bolivian doctor visiting Valencia contacted Mateo and asked her if it might work to combat *vinchucas*, bloodsucking insects found across Latin America that transmit a nasty parasitic disease called Chagas.

Mateo had never heard of Chagas, which can cause heart failure and other cardiac or intestinal complications. In 1998, Mateo traveled to Bolivia to test her technology, a visit that morphed into an ongoing love affair with the country. She divides her time living with indigenous peoples in Bolivia's forests, building and painting houses, and conducting research in her lab in Valencia. "We spend all this time talking about medicines and diseases when the primary problem for half the planet is that their homes are sick," she says.

Using roughly \$6 million of her family's money and \$12 million in grants from nonprofits, Mateo has done research, created educational programs about hygiene, and helped paint more than 8,000 homes in Latin America and Africa. After the former Bolivian health minister tried to rescind the country's approval of the paint, locals protested. President Evo Morales in November invited Mateo to his office, and the Andean nation again allowed the paint.

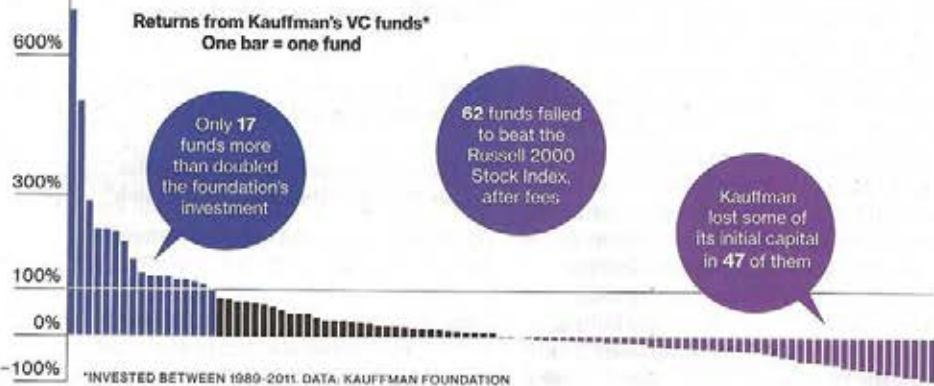
Health authorities are increasingly receptive to technologies that can overcome resistance bugs build up to insecticides, says S. Patrick Kachur, chief of the malaria branch of the Centers for Disease Control and Prevention in Atlanta. Mateo's formula helps slow the development of resistance because the paint is packed with multiple pesticides, which she buys from big companies such as **BASF**, **Bayer**, and **Dow AgroSciences**. Traditional sprays typically hold just one formula because mixing them could render them ineffective; the microcapsules keep ingredients from interacting. Most important, the microcapsules reduce the quantities of insecticides needed.

Tom McLean, chief operating officer of the Innovative Vector Control Consortium in Liverpool, a group funded by the Bill & Melinda Gates Foundation to control parasitic diseases, says it has been a challenge to get insecticide makers to invest in fighting public health problems caused by insects because the returns are relatively meager. The market for pesticides to combat malaria and dengue "is much smaller, for example, than the market for golf greens," says McLean. "Insecticide companies have struggled to make the finances and R&D in [pest] control really work."

Mateo is planning to launch a

## Investing. **Home Runs for VC Funds? Don't Bet on It**

The Kauffman Foundation, which promotes entrepreneurship, recently looked at returns from investing part of its \$1.8 billion endowment in 99 venture capital funds. Almost half of the funds are in the red, and less than 20 percent have seen big payoffs. —John Tozzi







The  
**Defiant One**  
page 60 ▶

U.S. partnership to make and distribute the paint. A tinkerer whose husband says she often dreams up projects in the middle of the night, Mateo is also unveiling an insecticide-free lice-killing shampoo in Europe. Her new partnership in Accra plans to employ 500 workers in Ghana and sell the paint around the world. "By taking production outside Spain... we can reduce the cost and make it more accessible," says Alejandro Pons, chief executive officer of the Ghanaian venture. "It will cost the same as normal paint but will mean you don't get malaria." —*Nick Leiber*

*The bottom line* A Spanish company is opening a \$10 million factory in Ghana to make paint that slowly releases pesticides to help control malaria.

**Food**

## This Little Farmer Went to Market

▶ The locavore movement has created a \$1 billion opportunity

▶ "It bodes well for the future of small farms, especially near big cities"

For decades, **Beechwood Orchards** in Biglerville, Pa., sold its apples, peaches, and other fruits and veggies to wholesalers, who would then consolidate the produce with shipments from other farms and dispatch it to supermarkets across the region. These days, Beechwood is more often cutting out the middlemen. The orchard's owners, Melissa Allen and her brother, now travel to as many as 14 farmers' markets a week in places as distant as Leesburg, Va., a three-hour drive away. The family gets about half its revenue from direct sales to consumers. "It's a new way to do things at a farm that has been around 100 years," says Allen, the fifth generation of her family to work the soil at Beechwood.

The number of farmers' markets in the U.S. has nearly doubled since 2004, to more than 7,000, according to the U.S. Department of Agriculture, throwing a lifeline to struggling family farms. Though only about 2 percent of farm

sales in the U.S. are retail, the USDA estimates that consumers spent \$1 billion at farmers' markets last year. Growers today "are willing to try new things, new products, interact with customers," says Nicky Uy, a senior associate at the Food Trust, a Philadelphia nonprofit that runs 26 markets. "It bodes well for the future of small farms, especially near big cities."

While the rising popularity of locally sourced food is contributing to the increase, competition from agribusiness is also spurring small farmers to reserve a spot at the local market. After markups from distributors and supermarkets, consumers typically pay about four times what a farmer gets selling his produce wholesale, says Larry Lev, a professor of agricultural economics at Oregon State University. And markets let small farms create brands, Lev says. "They are selling produce that is identified as theirs," he says, "which they can translate into better sales."

Those sales mean a lot of hard work. Jim Daily takes produce to four farmers' markets a week for his daughter and son-in-law, who own a farm in Woodstown, N.J. Rain or shine, Daily loads up his van at 6 a.m., picks up a couple of teenage helpers, and gets to the market early to set up three tents and several tables. He chats with customers, bags tomatoes, asparagus, and other veggies, and tracks

sales in the ledger book he keeps at his side. "It's not just a party," Daily says. "But the hours are condensed and busy, so you don't notice the time going." Since Daily started selling at markets a few years ago, direct retail sales have grown to about 20 percent of the \$1 million the farm grosses every year.

Jonathan Ray says the benefits of closer contact with customers and neighboring farmers make it worth the hassle. Ray grew up at **Cates Corner**, a farm in Hillsborough, N.C., that his family received eight generations ago under a land grant from the King of England. After earning a degree in agribusiness from Appalachian State University in 2009, Ray realized that the 200-acre farm might not survive for another generation. So he decided to take advantage of increasing suburbanization in the area, near Chapel Hill, by catering to new residents eager to buy local produce. Today the farm gets about 60 percent of its "low six-figure" revenue from farmers' markets, says Ray, who has been impressed with how much his customers know about food. The market "is a good time to connect with your customer base, to see what they will buy," Ray says. "And it is a social time, to get to chat with other farmers for other ideas." —*Robert Strauss*

*The bottom line* Small U.S. farms are earning a growing share of their profits by setting up tables at the country's 7,000-plus farmers' markets.

Farmers' markets boost margins and help growers understand shoppers

