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A TIMES INVESTIGATION

Pesticide maker sees profit when others see risks

Amvac buys rights to older chemicals that have raised health concerns. The company says it puts safety first.

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From its factory on a lonely strip in Los Angeles' industrial sprawl, Amvac Chemical Corp. does a booming business selling some of the world's most dangerous pesticides.

Amvac has fueled double-digit revenue growth through an unusual business practice: It has bought from larger companies the rights to older pesticides, many of them at risk of being banned or restricted because of safety concerns.

The company has fought hard to keep those chemicals on the market as long as possible, hiring scientists and lawyers to do battle with regulatory agencies.

While profitable, Amvac's focus on older pesticides has come at a cost to human health and the environment, according to EPA and state records, regulatory investigations and a string of lawsuits.

Accidents involving the company's pesticides have led to the evacuation of neighborhoods and the poisoning of scores of field workers in California and elsewhere.

Amvac is a leading maker of organophosphates, a class of older, highly toxic pesticides that has been under regulatory scrutiny since the late 1980s.

As larger firms have stopped manufacturing some of their organophosphates, Amvac has bought the rights to make or sell 10 of them since 1989, according to company records and interviews.

One of them, mevinphos, was banned in the U.S. in 1994 after a study by the U.S. Environmental Protection Agency found that it was responsible for poisoning more field workers in California than any other agricultural chemical. Amvac continues selling the product overseas, according to company officials.

Amvac is by no means the largest producer of pesticides that have attracted regulatory scrutiny, but the company stands out for its willingness to embrace chemicals that other firms have abandoned.

"There's something here rather unique, which is a company that basically goes intentionally after chemicals that are in trouble because of health and safety concerns," said Steve Schatzow, a former director of the EPA's pesticide program and now an attorney for pesticide firms. Amvac "buys them up at a discount price from the major chemical companies who no longer want to be associated" with them, he said.

Amvac, a former client, fired Schatzow in 1994 after his negotiations with the EPA ended in the ban on mevinphos.

Eric G. Wintemute, Amvac's chief executive, defended the company's record. In a series of interviews, he said Amvac's chemicals give farmers the tools to protect crops that feed people throughout the world.

Wintemute, the son of one of Amvac's founders, acknowledged that its products carry risks, but said the company had spent more than $150 million conducting tests required by regulatory agencies and training pesticide applicators to reduce that risk.

He said that in most poisoning cases involving Amvac products, regulators found that the pesticides were used improperly. Amvac's products are safe, so long as they are used according to the safety guidelines, he said.

"We focus on how to keep our products in the marketplace," Wintemute said. "If we have incidents, we lose an asset. We have to put safety first in order for the company to survive."

Industry analysts say that Amvac has shown a commitment to improving the safety of its chemicals.

"The largest crop-protection companies are less interested in trying to make a lot of money out of the organophosphates because they know they're a class of chemistry on the way out," said Philip Jarvis, publisher of the trade magazine Agrow World Crop Protection News. "If Amvac is selling these older products, at least they are older products in a safe pair of hands."

Environmental groups contend that Amvac has used stalling tactics and legal threats to blunt EPA efforts to restrict its pesticides.

They cite the case of DDVP, an ingredient in home pest strips. An EPA review of the product's safety has dragged on for 19 years, while the strips have remained on store shelves and in homes.

EPA officials disputed the contention that they were cowed by Amvac, saying the agency has clamped down on the company's products when they were a proven threat to the public. With DDVP, officials said, the risk was less clear-cut. The agency ultimately required Amvac to reduce the size of pest strips used in homes.

"There are outside groups who consistently tell us, or imply, that we do what Amvac wants," said Jim Jones, the top EPA deputy for the Office of Prevention, Pesticides and Toxic Substances. "The record is so filled with documentation of us disagreeing with Amvac, it's kind of amazing that that's how people interpret it."

Pesticide scandal breaks

Glenn A. Wintemute was an entrepreneur with chemistry and biology degrees from the University of Southern California when he bought a small pesticide company in 1963 called Durham Chemical. He later joined with a partner to run American Vanguard Corp., the Newport Beach-based holding company that owns Amvac.

Wintemute had big plans, aiming to take on pesticide giants such as Dow Chemical Co. But by the late 1970s, his company was deeply in debt.

Then a pesticide scandal broke in California's Central Valley in 1977. Nearly three dozen workers at an Occidental Petroleum Corp. factory in Lathrop were found to have low or zero sperm counts.

Suspicion focused on one of the factory's primary products: dibromochloropropane (DBCP), a pesticide used to wipe out worms in soil. Tests dating to the 1950s had shown that the product could cause testicular atrophy in lab animals.

The EPA suspended most uses of DBCP within a few months of the Lathrop sterility findings. Dow Chemical Co. and Shell Chemicals, the primary makers, announced that they were ceasing production.

Where others saw danger, Wintemute saw opportunity. Amvac, which had ceased making DBCP years earlier, renewed production after the EPA suspension, according to Amvac board minutes and state records. Amvac quickly became the primary U.S. manufacturer of the chemical, according to the EPA.

With domestic sales down because of the EPA scrutiny, Amvac turned to foreign markets, supplying DBCP to Standard Fruit Co. (later Dole Fruit Co.) in 1978 and 1979 for use on Latin American plantations, according to company records.

In 1979, the EPA proposed banning the chemical permanently in this country. During hearings, Wintemute defended the product, disputing government tests.

Amvac persuaded the EPA to allow continued use of DBCP for pineapple crops in Hawaii. In exchange, Amvac agreed to produce a safety guide for users and closely monitor levels of DBCP in groundwater. After wells in Hawaii showed signs of contamination, the pesticide was banned in the U.S. in 1985.

The company faces a lawsuit charging that the DBCP it made sterilized agricultural workers in Nicaragua. The suit is scheduled to go to trial in Los Angeles this year. Amvac and its fellow defendants, including Dow and Dole, say there is no proof the workers were harmed by the pesticide.

In a recent deposition, Glenn Wintemute said Amvac had issued stringent safety recommendations before selling DBCP. Wintemute was matter-of-fact in describing the company's interest in DBCP: "It was a product that was profitable."

Orchard workers poisoned

Organophosphates kill by inhibiting the nervous system. The most potent compounds in the class of chemicals, such as Sarin, are used as chemical weapons. Mevinphos is among the most toxic organophosphates to be used as a pesticide. It can be fatal even in minute amounts.

During the 1980s, Amvac made the chemical under a contract with Shell and later DuPont Co.

By the late 1980s, mevinphos had been implicated in hundreds of poisonings across the country, mostly affecting farm workers exposed while working with lettuce, broccoli and other vegetables. The workers suffered seizures, vomiting, depression and in several cases death.

In 1988, United Farm Workers leader Cesar Chavez went on a hunger strike to protest the use of mevinphos and four other pesticides, which he blamed for sickening field hands.

In January 1989, DuPont decided to quit manufacturing mevinphos and sold exclusive rights to Amvac.

Amvac sought to expand the market by selling mevinphos to apple growers in Washington state. An opportunity existed there because several larger pesticide firms had decided to take an older, less-toxic organophosphate off the market in the face of EPA concerns.

Internal memos contained in court files show that Amvac executives were nervous about selling mevinphos in Washington, where it had rarely if ever been used in orchards.

Jack Prieur, then the company's director of regulatory affairs, "is not comfortable that this can be done safely," Eric Wintemute wrote in an August 1992 memo exploring potential difficulties of selling the product.

One of Prieur's concerns was how mevinphos would be applied. California regulators required that it be mixed in closed vats to prevent vapors from escaping. Washington had no such requirement. Growers there mixed pesticide brews in open barrels and then sprayed them onto apple trees with an air blaster towed by a tractor.

Amvac worked with Washington regulators to devise new rules for using mevinphos, memos show. The rules did not require closed mixing systems — growers said that would be too costly. Instead, Amvac agreed to offer training in the use of respirators and proper handling procedures.

Regulators and Amvac believed that enough applicators were receiving training to ensure that mevinphos was used safely, Wintemute said.

"At the end of the day, we felt we had basically reached the market," he said.

Mevinphos made its Washington debut in the summer of 1993. Almost immediately, workers at orchards across the state reported problems. By the end of the summer, there were 26 documented cases of worker poisonings, including seven that resulted in hospitalization — the largest number of pesticide casualties ever recorded in Washington in such a short time, according to state regulators. Cliff Weed, a Washington pesticide official, said many of the incidents involved growers not following directions.

Martin Martinez, 42, was one victim. He recalled that an acrid smell suddenly filled his respirator as he mixed the pesticide for an orchard in central Washington. He began vomiting, fainted and was hospitalized for a week. It was a year before he recovered from dizzy spells, headaches and severe depression.

Martinez speculated that a problem with the respirator caused him to be exposed.

"We had never had [mevinphos] before. It was new," said Martinez, who lives in Washington's rolling central hills. The orchard owners "didn't say it was dangerous or anything…. They just told us to put this on."

Within a year of the incidents the EPA proposed banning the chemical.

Amvac at first argued for continued use, but then voluntarily withdrew mevinphos from the U.S. market in 1994. At its peak, mevinphos represented 25% of Amvac's revenue.

"Ultimately, it was our responsibility and ultimately, we paid the price for it," Wintemute said.

Amvac continues to sell the insecticide in Mexico, South Africa, Australia and other countries, Wintemute said in an interview last fall. He said sales last year amounted to less than 1% of the company's $193.7-million annual revenues. Wintemute said there had been no health problems associated with the product abroad.

Jerry Blondell, a retired EPA epidemiologist who wrote the agency's mevinphos study, said he was stunned to learn that it was being sold overseas.

"There's no excuse for selling a product like that, particularly in a country that doesn't have regulations like we do," Blondell said.

Opportunity in EPA moves

In 1994, just weeks after Amvac agreed to withdraw mevinphos in the U.S., Glenn Wintemute stepped down as president. Now 82, he continues to serve as co-chairman of the board and is a major stockholder.

He was replaced by his son, Eric, who had spent most of his career at the company. Eric boasted that he would turn the company into a billion-dollar business. But he faced tougher challenges than his father.

During the 1990s, organophosphates were coming under intense scrutiny. In 1993, a National Academy of Sciences report raised concerns that the compounds might affect children's neurological development. A few years later, the EPA launched a decade-long review that would ultimately impose bans and tighter restrictions on the compounds.

Bigger companies were also developing new pesticides that were less toxic to the environment and targeted at specific pests. Major firms such as Monsanto Co. were introducing genetically modified seeds that resisted attacks by insects and fungus.

Amvac saw a business opportunity in the regulatory pressure and the willingness of big companies to sell the rights to manufacture or market organophosphates, especially those with low sales.

Since Eric Wintemute took over, the company has acquired organophosphates at a rapid pace. Today, the company makes or sells nine of about 30 such pesticides still on the U.S. market. Of 25 chemicals that Amvac has acquired since 1989, the Pesticide Action Network, a nonprofit anti-pesticide group, lists 17 as "bad actors" — compounds deemed especially dangerous to human health or the environment.

In its current literature, Amvac says it aims to acquire "niche product lines from basic research companies that divest mature products in order to focus on" new chemicals. Amvac boasts of increasing sales through a "diligent commitment to regulatory challenges" and through marketing campaigns designed to "breathe new life" into old chemicals.

The strategy has turned Amvac into one of the most profitable and fastest growing pesticide companies in the U.S. Although its revenues are a fraction of those of the biggest pesticide companies such as Monsanto and Dow, its profits increased by an average of 24% per year over the last five years, though last year the company experienced a slowdown in growth.

Eric Wintemute said the company improves on the safety of the chemicals it acquires, providing training for users, improving labeling and investing in technology such as the SmartBox system. The system enables farmers to load pesticides into an enclosed applicator towed behind a tractor, limiting chances for accidental exposure.

"If we believe a product has a problem, we would not sell it," Wintemute said.

Larger companies said they sold their chemicals to Amvac because they believed it was a responsible steward. For instance, Dow licensed the organophosphate chlorpyrifos to Amvac in 2006 because it was impressed with SmartBox.

"The reasons why customers would want our product packaged in this technology are obvious, and we see the SmartBox system as an enhancement in product stewardship," said Garry Hamlin, a spokesman for Dow AgroSciences.

Environmentalists are skeptical of Amvac's efforts to mitigate the health risks of its products. They say that consumers and farmers often ignore labels or misuse equipment.

Agriculture experts and scientists also say that in many cases, there are less toxic alternatives to Amvac's products, although the other options are often costlier.

Keeping old chemicals on the market, says Charles Benbrook, chief scientist for the Organic Center, a nonprofit group in Rhode Island that promotes organic farming, has "perpetuated completely unnecessary, high-risk exposures for both farm workers and the environment."

Pest strips raise concerns

In the 1970s and early 1980s, dimethyl dichlorovinyl phosphate (DDVP) was the most widely used household pesticide in the country, a common ingredient in insect sprays, flea collars and pest strips.

That popularity attracted the attention of EPA regulators. A study in which lab mice were fed DDVP and developed stomach tumors caused the EPA to classify the chemical as a "probable" carcinogen. Other studies raised concerns about its effect on the nervous system.

In 1988, the EPA placed DDVP under special review, requiring manufacturers to prove the chemical's safety or face a ban on the product.

Other manufacturers soon stopped producing DDVP, and by the early 1990s, Amvac was the only U.S. company still making the chemical.

"Everybody bailed except us. We believed in the molecule. We thought the cancer issues were not real," Wintemute said.

DDVP pest strips work by slowly releasing low levels of toxic gas that inhibit the nervous system of insects. By the mid-1990s, the EPA's principal worry was that prolonged exposure to the gas could inhibit the nervous system of humans as well. In 1995, the EPA proposed to prohibit all residential uses.

For the next decade, the EPA and Amvac battled over the chemical's health effects. The EPA eventually downgraded DDVP to a "possible" carcinogen.

To overcome the neurological concerns, Amvac submitted hundreds of pages of test results that it said showed the chemical was safe. Some EPA officials questioned the relevance of the submissions, which required lengthy review.

In 2002, the EPA again prepared to block the pest strips from home use. That June, Stephen L. Johnson, the current EPA administrator who then oversaw the agency's pesticide program, publicly speculated that DDVP might be banned.

The company responded by threatening to file a so-called Bivens lawsuit charging individual EPA officials with overstepping their authority, according to a letter sent by Amvac to the EPA. Such lawsuits are typically used by individuals to bring suit against government officials for deprivation of their constitutional rights, as in police brutality cases.

Subsequently, according to the letter, the EPA met with Amvac and agreed to freeze the DDVP review for several months. In the end, Amvac did not file a lawsuit.

By 2005, EPA calculations still showed that the pest strips emitted unacceptable levels of gas. Then, in April 2006, the EPA relaxed its safety standards after new Amvac tests showed that young lab animals were not more vulnerable to the gas. Still, the agency required the company to reduce the size of the strips and place new cautionary language on labels warning against using the strips in enclosed spaces.

The EPA decision came despite its analysis that there were "low benefits" associated with the pest strips, and that less-toxic alternatives were available.

Environmental groups are suing the EPA, contending that the decision was based on incomplete data and that the new labels are confusing. They contend that Amvac wore down agency officials with legal threats and sheer determination.

"The EPA blinked," said Aaron Colangelo, an attorney for the Natural Resources Defense Council.

Amvac could still face regulatory hurdles from individual states. California threatened last month to initiate proceedings to remove the strips from the market unless the company does further testing.

Eric Wintemute said the long EPA battle proved that the strips were safe.

"We do have a reputation of being pretty stubborn," he said. "If you're right, you're right."

Towns evacuated

Amvac's latest battle is over one of its biggest sellers: metam sodium, the third most widely used pesticide in the country.

Farmers inject metam sodium into the ground or sprinkle it on fields before planting crops such as carrots, potatoes and strawberries. Once in the soil, the compound gives off a gas that kills bugs and bacteria.

Since the late 1980s, the chemical has been linked to several mass poisonings.

Many of the incidents have resulted from mistakes by applicators. When applied incorrectly, the gas can waft off fields and into nearby neighborhoods and schools. The result is similar to a tear gas attack — victims suffer watery eyes, constricted throats and difficulty breathing, followed by vomiting and dizziness.

In 1991, a train carrying metam sodium made by Amvac overturned in the Sacramento River near Dunsmuir. A toxic cloud sickened more than 700 people, and the chemical wiped out virtually all wildlife along a 42-mile stretch of river. A study found that several victims developed long-term asthma from the high-level exposure. Amvac paid $2 million as part of a settlement in a lawsuit filed by California, but admitted no wrongdoing.

The accident did little to slow Amvac's interest in metam sodium. During the late 1990s, Amvac acquired the rights to the chemical from two competitors. Marketing efforts resulted in a 13-fold rise in sales, according to a corporate presentation. Amvac now controls 60% of the metam sodium market.

In 1999, metam sodium made by an Amvac competitor was linked to an accidental poisoning of more than 170 people in the San Joaquin Valley town of Earlimart, according to court files and state records. Three years later, more than 250 people were sickened around the

nearby town of Arvin in an accident involving Amvac's metam sodium product, state records show.

The incidents attracted the attention of California and the EPA, which had long been concerned about the effects of pesticides drifting off farms.

In 2003, the EPA reported that metam sodium played a role in one-fifth of all poisoning incidents in California affecting 10 or more people.

A preliminary EPA analysis in 2004 suggested that the safe use of metam sodium required buffer zones as large as a mile between fields and population centers.

Amvac, worried that farmers would stop buying metam sodium if such large buffers were required, hired a consultant whose computer model indicated that smaller buffer zones — as little as a few hundred feet in ideal conditions — would protect public health.

The EPA analysis "threatens to undercut the commercial viability of metam sodium," Amvac's lawyers wrote in June 2005.

The EPA and California are expected to announce new restrictions on the use of metam sodium and other soil fumigants this year.

Wintemute said in an interview that metam sodium is safe under current restrictions so long as it is used properly. He said he was confident the industry had learned from the "poorly handled" incidents in California, and that the risk of an accident had decreased.

Michael O'Malley, a UC Davis doctor who has studied metam sodium incidents, disagreed. "You have a big volume, close to a community. You're rolling the dice," he said. "The odds are something is going to happen."

A poisoning is no mere possibility for the people of Edmundson Acres, the neighborhood evacuated during the 2002 incident near Arvin.

One minute, families were sitting outside enjoying a summer night. The next, adults and children began screaming, choking and vomiting.

Some parents hustled their children indoors; others tried to flee in cars. Fire officials who rushed to the scene were unsure what was happening. An elderly woman was hospitalized.

An investigation determined that the farming company that applied Amvac's product erred by not quickly spraying water over a nearby field to prevent gas from escaping.

Locals say it is only a matter of time before somebody else makes a similar error.

"We can't just pack up our stuff and leave. I think it should be safe," said Janette Serna, who was sickened in the incident. "We're not guinea pigs."

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