SHELLEY, IDAHO -- It took farmer Merrill Hanny three days to bury $100,000 worth of his perfectly good potatoes. He remembers how they crunched beneath his tractor as he plowed over his muddy field in the spring of last year.

Mr. Hanny destroyed part of his crop at the behest of the United Potato Growers of America, a fledgling group of regional farming cooperatives. The group aspires to be to potatoes what OPEC is to oil by carefully managing supply to keep demand high and constant, resulting in a more stable return for farmers.

The new organization has been a boon to Mr. Hanny, 53 years old, and other farmers who for years have watched potato overproduction push down prices and mash profits. "For the first time, I feel in control of my destiny," says Mr. Hanny, who is married and has seven children.

From the french-fry farms of Washington state to the spud fields of Texas, potato farmers are joining the new movement. Formed in March 2005, United Potato says it has recruited farmers and regional cooperatives who till more than 60% of the potato acreage in the U.S. Some Canadian growers have also enlisted.

In the past year, United Potato helped erase 6.8 million hundred-pound potato sacks from the U.S. and Canadian markets -- the equivalent of about 1.3 billion medium orders of french fries at McDonald's. For farmers, their open-market returns surged to $10.04 per hundred pounds, up 48.5% from last year.

So far, for competitive reasons, supermarkets have absorbed the increased payments to farmers so potato prices for consumers have risen only slightly. In general, restaurants that serve french fries haven't pumped up prices either, but if open-market prices remain high, farmers under contract to restaurants may have more leverage to ask for higher prices.

"We're helping people get the message of, 'Stop overproducing,' " says Julia Cissel, chief executive of the cooperative based in Salt Lake City.

United Potato says it is trying to preserve the North American potato farm. There are fewer
than 10,000 potato farmers today, down from more than 50,000 three decades ago, says the U.S. Agriculture Department. That's partly because, as with other crops, big growers are gobbling up small ones. Also, demand for potatoes has tapered off due to dietary trends. Potatoes remain the most popular individual accompaniment to a main dish, but people are cooking fewer at home.

In a sign of the uncertainty that today's farmers face, even Idaho is reexamining its identity as a potato-producing region, with lawmakers recently debating a measure that would remove the phrase "Famous Potatoes" from state license plates. The proposal fizzled, but the anxiety over the future of potato growing remains.

United Potato's annual campaign to support potato farming begins a few months before the spring planting season. That's when United Potato's 20-member board of directors decides, with the approval of the membership, whether farmers are on track to overproduce and, if they are, sets a target for acreage reduction. The decision is based on reports from the field and input from analysts. Then the directors meet with the regional co-ops to determine how to execute cutbacks locally. That could mean, for instance, slashing more acres of one particular variety of potato over another. United Potato also might pay a farmer to keep excess crops off the market.

In years past, potato farmers were all too willing to take a loss on sales if it meant increasing their market share. The result was that prices became so low, the industry was unprofitable. By destroying some of their crop, many farmers believe they are helping to create a seller's market. Mr. Hanny says he willingly destroyed part of his crop to prove his loyalty to the group.

Some farmers give their extra produce to the poor. But in order to be turned into something tasty, raw potatoes need to be cooked and processed, and that can mean an additional expense for whatever organization accepts the potatoes to distribute them. Plus, potatoes have a short shelf life, so shipping them to other countries as a donation requires them to be dehydrated.

The spud cartel's manipulation of supply is perfectly legal. Orange, dairy and other farmers have employed similar co-ops as market stabilizers since 1922, when the Capper-Volstead Act exempted farmers from federal antitrust laws, permitting them to share prices and
orchestrate supply. Over the years, though, farmers of fresh vegetables have tended to avoid co-ops due to market volatility, varying regional tastes and quality-control concerns stemming from climate differences.

Potato farmers have proven especially resistant to joining national groups, partly because different growers serve different customers. Most french-fry potato farmers have contracts with food companies that set production levels and prices. Others sell their potatoes without fixed contracts on the open market, where they're more vulnerable to shifting supply and demand. Historically, growers have responded to thin profit margins by planting extra acres -- which helped depress prices further.

"It's one good year, then four or five bad years," says Albert Wada, one of Idaho's biggest growers. In recent years, price wars cropped up as farmers tried to steal market share from one another. "It had become a last-man-standing mentality," says Doug Hanks, a third-generation potato farmer in St. Anthony, Idaho.

In September of 2004, Mr. Wada and another big Idaho grower, Keith Cornelison, summoned nearly two dozen of the state's growers to a crammed office in Blackfoot, Idaho, which calls itself the "Potato Capital of the World." They talked about how to curb production and boost prices. After more meetings, phone calls and emails, they agreed to form the United Potato Growers of Idaho.

That November, Mr. Wada presented the plan to 650 state farmers in Idaho Falls, prompting a standing ovation. Many farmers signed up on the spot, agreeing to pay annual dues ranging from about $10,000 to $500,000, depending on how much a farmer grows.

Mr. Hanny was one. The third-generation farmer had lost about $500,000 in the previous few years and wouldn't have planted potatoes at all -- but then he found out about the co-op. After hearing Mr. Wada, he wrote to fellow growers praising United Potato and urging them to think of their children's college education driving away with the truckloads of potatoes they grew.
The Idaho co-op next hired Jerry Fields, a former H.J. Heinz Co. and ConAgra Foods Inc. executive, to handle business decisions. He pushed the group to go national. Although Idaho produces around 30% of U.S. potatoes, Mr. Fields believed the co-op couldn't influence prices without members from other big potato states.

The Idaho group became the national group. Messrs. Fields and Wada crisscrossed the country, recruiting farmers from California, Oregon, Wisconsin, Colorado, Washington, Texas and elsewhere. "Everybody knew there was a need, but they were all independent businessmen," says Mr. Fields, who took the job on a temporary basis and has since given way to Ms. Cissel.

Past regional co-ops crumbled after initial successes as growers slowed production to take advantage of higher prices. United Potato members say this group will last because many large growers across the country have joined, recognizing that food-industry consolidation makes it imperative that growers unite.

Some skeptical nonmembers think the co-op is merely a way to help large Idaho farmers who typically have overproduced. "Every time things get bad, there's an organization that pops up and claims they're going to solve the potato world's problem," says James Hoff, a 37-year-old, fourth-generation farmer from Idaho Falls who has refused to join United Potato. Adds Tim Hobbs of the Maine Potato Board, "If the problem was caused in the West, the West ought to solve the problem."

A big test for United Potato will come this spring, when higher prices could tempt members to plant more than they're allotted. Keeping them in line is "not going to be easy," says Tim O'Connor, CEO of the U.S. Potato Board, the industry's marketing arm. United Potato says it will monitor farmers with the aid of satellite photography and global-positioning-system technology. Violators can be fined up to $100 an acre; so far, no fines have been levied.

Mr. Hanny recently replaced one entire potato field with wheat to comply with United Potato's acreage reduction. He says the co-op's success has him dreaming that his son Austin, 14, will succeed him when he retires. "Now there's hope," he says, "and hope affects everything."

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Corrections & Amplifications:

Jerry Wright is the chief executive officer of the United Potato Growers of Idaho. His last name is incorrectly given as Fields in this article.