

Move Over, Curds. Whey Is the New Big Cheese.

By KEVIN DRAPER

MARSHFIELD, Wis. — Ken Heiman is a certified Master Cheesemaker, one of four who ensure that the Cheddar, Gouda and other cheeses made at Nasonville Dairy in Marshfield, Wis., taste great.

But as proud as he is of his cheese, Mr. Heiman knows that his company's profitability these days is thanks less to Colby than it is to whey, the liquid byproduct of making cheese that helps to satisfy America's seemingly insatiable appetite for added protein.

Nasonville Dairy produces around 150,000 pounds of cheese a day, but just breaks even on most of it, especially the 40-pound blocks of Cheddar that are a cheesemaker's stock in trade. What increasingly keeps the lights on is whey.

"We ought to be thanking people who are buying whey protein at Aldi's," said Mr. Heiman, who, in addition to being a Master Cheesemaker, is Nasonville's chief executive. "It definitely enhances the bottom line."

Whey is so valuable because it can deliver a lot of protein in a small caloric package, especially as exhortations to consume more protein have popped up everywhere over the last two decades.



TIM GRUBER FOR THE NEW YORK TIMES

Dairies are profiting off of whey, a liquid byproduct of making cheese that has grown increasingly valuable as a protein source.

Doctors recommend additional protein for healthy aging. Weight lifters often take protein to build muscle, and more women and members of Generation Z are taking up the sport. Popular eating trends like the Keto diet emphasize eating a good amount of protein and fats.

More recently, the demand for whey has been turbocharged by the growing use of GLP-1 drugs

like Ozempic. Patients taking those drugs are advised to increase their protein intake to avoid muscle loss.

Whey protein powders, and the increasing number of whey-protein-enhanced products on grocery store shelves, are an expedient way of consuming a lot of protein. Estimates of the size of the whey protein market vary from

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around \$5 billion to \$10 billion, but nearly all analysts say the market will double over the next decade. A pound of the highest-protein whey powder that cost about \$3 in 2020 costs almost \$10 today, according to Ever.Ag insights, an agriculture data company.

The demand has trickled down and completely altered the economics of the dairy industry.

When Mr. Heiman, 72, began his career in the 1960s, whey was pumped down a river, spread on a field or fed to pigs. In other words, it was waste, and the only goal was to get rid of it as cheaply as possible.

Times have changed. “In the last decade or so, there are times when cheese is the byproduct of cheese production, and the cheese plants make more money off the whey production,” said Mike McCully, a dairy industry consultant.

The Meissners' Cows

Whey begins its journey to your muscles at dairy farms like Norm-E-Lane in Chili, Wis., started by Norm and Elaine Meissner in 1946.

Wearing a maroon Norm-E-Lane T-shirt, jeans and work boots, Josh Meissner welcomed me to his farm with a crushing dairyman's handshake. The third generation of Meissners to run the dairy (Norm and Elaine were his grandparents), Josh, along with his son Emmett, led me through the milking parlor with its 50 milking stations, three huge barns housing 2,500 cows and fields of corn.

In one of the barns, a cow gave birth, and Josh Meissner walked over to check on the glistening newborn calf. Satisfied that all was in order, he wiped his hands on some straw and resumed talking. Fifteen calves a day are born on the farm; it was no big deal.

Norm-E-Lane is a relatively large farm that does everything possible to control costs. Manure, for example, gets pushed into drains and sent to a methane digester to be converted into natural gas.

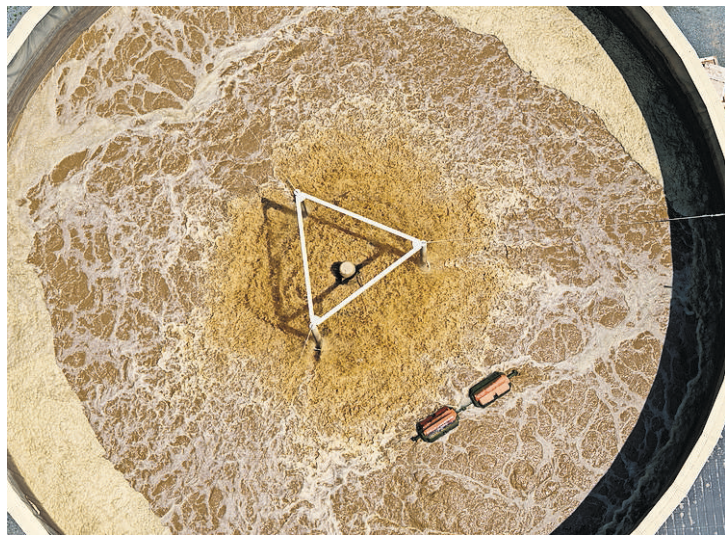
Still, the Meissners have little control over what they are paid for their milk. They are what economists call price takers, not price makers.

Milk is not priced like other commodities. Most milk in the United States is sold to dairy co-ops. The minimum price that farmers receive is set by the federal government — a system set up in the 1930s to bolster milk producers — and changes monthly depending on the various market forces hitting all milk products (cheeses, butter, yogurt, whey, etc.). Even farmers, like the Meissners, who sell their milk directly to cheese producers, get essentially the co-op price for their milk.

“There is not a lot of wiggle room of shopping around these days,” Josh Meissner said.

Marin Bozic, a former agricultural economics professor and the founder of a company that provides dairy and livestock data, calculated that in the early 2000s the value of whey averaged around 2.7 percent, and never more than 6.4 percent, of the monthly milk check that dairy farmers received. Since 2021, whey has made up 8.7 percent of the average milk check, sometimes climbing well above 10 percent.

Dairy is not much of a growth industry. While there have been some gains in production, when



An aeration basin at Nasonville Dairy in Marshfield, Wis., left, and cows at the Norm-E-Lane farm in Chili, Wis., six miles away.



Ken Heiman, above, is a cheesemaker at Nasonville, below left. Josh Meissner, below right, runs his grandparents' Norm-E-Lane.



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KEN HEIMAN, a Master Cheesemaker and the chief executive of Nasonville Dairy in Marshfield, Wis.

accounting for inflation, the price farmers receive for milk today is about the same as it was 25 years ago. One of the main reasons it has not dropped is whey.

The rise in the price of whey “stopped the farmer from getting absolutely beat into the ground when the price was so doggone poor,” said Mr. Heiman, the cheesemaker.

The Whey Maker

The Meissners sell the 200,000 pounds of milk their farm makes each day to Mr. Heiman at Nasonville Dairy, about six miles down the road.

Mr. Heiman is a gregarious, cheerful man with a large walrus mustache. But the economics of making cheese in Wisconsin are

sobering. Although Nasonville is the largest cheesemaker in Wood County, in the heart of America's dairyland, he says it can't compete with West Coast dairies, where multinational conglomerates have built massive cheese plants.

“If you are making the same kind of cheese they make, you're roadkill,” he said. “Those guys

have efficiency that just spooks you.”

Mr. Heiman's main factory is a beige, U-shaped building on Wisconsin's Highway 10. Large storage silos dot the property. Outside, in addition to the cars whirring by, construction vehicles beep around, realigning a nearby road and expanding the factory, which was built in 1885 and has been in

some form of operation since.

The factory makes dozens of cheeses, some to sell under its own brand and some on contract for other companies. The main plant produces huge quantities of feta (the company makes 15 percent of all feta produced in the United States), Cheddar, Colby and a few other cheeses, while a much smaller plant 30 miles north makes tiny batches of specialty cheeses like ghost pepper Jack.

Tankerloads of milk from Norm-E-Lane and 200 other farms in the area are pasteurized and then sent into two-story cylindrical cooker vats, where cultures, rennet and other ingredients are added. Once the cheese coagulates, it is pumped to a nearby finishing table that holds about 4,500 pounds of curds.

That cheese is salted, finished, compressed, packaged and refrigerated. But since it takes 10 pounds of milk to make one pound of cheese, a large part of the process is dealing with the 40,000 or so pounds of liquid that remains. It is sent into a dizzying array of small stainless steel pipes on the steamy whey side of the plant.

After separating out the cream and lactose, the remaining whey, which is naturally around 12 percent protein, is filtered down until it reaches around 65 percent protein, still in a liquid form.

Every 37 minutes a new tankerload completes this entire process, from milk to cheese and whey to a more concentrated protein. At the end of the day, Nasonville Dairy has about 100,000 pounds of high-protein liquid whey.

The Protein Boom

If Nasonville Dairy built a new factory today, it would include spray dryers, like its West Coast competitors, which turn the whey into a powder and increase its protein percentage. But spending millions of dollars on spray-drying equipment doesn't make economic sense for Wisconsin's small cheesemakers, so nutrition companies, like Actus Nutrition, have built facilities to transform the region's liquid whey into high-protein powder.

In January 2003, plants produced about eight million pounds of high-protein whey powder, according to data from the Department of Agriculture. That number grew steadily to between 35 million and 40 million pounds per month by 2018, before leveling off.

But things really took off in 2023 as a handful of anti-obesity drugs began inching onto the market. In May, 48 million pounds of high-protein whey powder were produced.

The boom will eventually end. A glut of new cheese and whey plants are being built, and like fluid milk and Cheddar cheese before it, high-protein whey will become a commodity.

Norm-E-Lane and Nasonville Dairy are already looking over the horizon.

Emmett Meissner has begun raising Angus steers, taking advantage of historically high beef prices and customers' interest in knowing more about where their beef comes from. Mr. Heiman is pushing his specialty cheeses, like the ghost pepper Jack, that the bigger, more streamlined factories cannot make.

“The curse of any commodity business,” Mr. Bozic said, “is that you cannot have extraordinary profits forever.”

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