



Prairie Farms' Investments Keep Luana Plant Producing Quality Products

Luana, IA—Prairie Farms Dairy's Luana, IA, plant has a rich tradition of making quality dairy products through constant improvements to their operations and the latest state-of-the-art technology.

Prairie Farms celebrated its 85th anniversary in 2023 and has extended its reach and products over the years by conducting more than 50 acquisitions and a dozen mergers, including six cheese manufacturing plants under the Prairie Farms Cheese Division.

Prairie Farms acquired the Luana cheese operation from Swiss Valley Farms Cooperative in December of 2016, thus providing the 600 farmer-family owned dairy cooperative opportunity for growth in the cheese industry.

The acquisition also included Swiss Valley cheese plants in Faribault, MN, Mindoro, WI, and Rochester, MN.

In 2020, two more cheese operations were added to the Prairie Farms Cheese Division portfolio with the acquisitions of Shullsburg Creamery and White Hill Cheese, both located in Shullsburg, WI.

Rod Kregel has been in plant operations at the Luana cheese plant since 1978. He continues to work in the operation half-time.

During his 45 years, Kregel said the company made Swiss cheese and varieties, and until the mid-1980s, Cheddar cheese.

"We had and continue to have a highly-sought after Swiss cheese and we stopped making Cheddar due to increased demand for our Swiss," Kregel said.

Back in the late 1970s, the plant was pretty small.

"We were making about 14 or 15 vats a day back in 1978-79," Kregel said. "We probably ran about 500,000 pounds of milk a day. Probably 25,000 pounds of Swiss and another 20,000 pounds of Cheddar."

Today, Kregel thinks the Luana operation is one of the largest Swiss cheese plants in the US, with total production somewhere in the top 10.

"We produce a quality Swiss cheese here," Kregel said. "That has driven growth. When you produce a consistently high quality product, you have no problem selling it."

Prairie Farms Luana makes about 120,000 pounds of Swiss a day.

"We're running about 1.2 million of milk into our Swiss cheese. I'd say in a day's time, we are in excess of 1.5 million pounds of milk a day here," Kregel estimated.

The plant processes nearly 440 million pounds of milk into nearly 45 million pounds of cheese a year, mostly into Swiss.

The plant also makes award-winning Havarti, Baby Swiss, Gouda, and Maasdam styles.

Prairie Farms' cheese products are available predominately

for the foodservice market both domestically and for export.

The Swiss cheese is made into 200-pound blocks and then cut into 100-pound blocks, packaged, and aged, primarily for sandwich cuts.

"Everything goes through our cutting room here," Kregel said. "About 95 percent of the cheese is made into profile totes where we take the 200 pounders and cut them into 28" x 3.5" x 7" to ultimately end up in slicers."

In another area of the plant, Cream cheese and Neufchatel are made utilizing cream from the Swiss production.

The plant makes roughly 25 million pounds of Cream cheese in a year's time.

Kregel said the Luana operation began making Cream cheese and Cream cheese styles in 1978, right around the time he started his career.

"It's worked out really well," Kregel said. "The two plants have meshed together perfectly."

Cream cheese is made into 3 pound brick, 8 ounce retail, 15 - 30 pound bags, and 5 pound tubs and 55 gallon drums.

The Luana operation added a new spray dryer a few years back that produces approximately 5,000 pounds per hour of non-hygroscopic sweet whey powder.

Upgrades And Expansions

Located in northeastern Iowa, the Luana operation has an activated sludge wastewater treatment plant that can treat 280,000 gallons per day.

The plant's evaporator and RO systems allow the plant to recycle water for cleaning processes within the plant.

"Since when I first started, it seems like we have been continuously improving the operation here," Kregel said. "They are constantly adding on and making upgrades to the facility."

The plant has undergone a series of expansion renovations over the years.

A \$20 million investment announced in 2014, upgraded much of its equipment, increased its production capacity, and expanded its cheesemaking capabilities.

The cooperative added a new process room in 2016 and has fin-

ished up adding cooler space this past year, Kregel mentioned.

"We needed the new storage to relieve some of the pressure and movement of the cheese," Kregel said. "Now we can keep the Swiss here until it reaches its birthday."

Kregel explained that the new process room is a new block-forming facility where 200-pound cheese moulds are filled with curd, pressed, cured, and de-moulded before the cheese goes into brine.

"We've remained on top technologically speaking," Kregel said. "The Alpma system is as good as it gets. The addition of the Alpma system, that line where you direct fill is really nice. It has a curd measurement system on it that tells it how much curd to put into the mould. It is very nice."

Production never ceased due to expansions and upgrades, Kregel said.

"We always needed to meet production. We were never down for an extended period of time. The latest technology and automation we have put in here will reduce shipping and movement of the cheese, alleviates some of the pressure brought on by labor shortages and for employee safety reasons," Kregel said.

"All these little pieces of the puzzle we continue to put together gets you a darn good, consistent piece of cheese," he said.

Reflectronics Milk Coagulation Sensor - FluorLite

In March of 2023, Prairie Farms Luana added milk coagulation process control sensors to all seven of their Tetra Pak 45,000 pound cheese vats.

Named FluorLite, the sensors are said to improve product consistency, keep production on schedule, and improve cheese yield.

"We've been playing with the sensor for about two years," Kregel said. "We had it in one vat but made the decision to add the sensor to all of the vats. I think it was a good decision."

The sensor monitors the milk in the vat. It starts when the rennet is added. While the milk is in the setting phase, FluorLite determines the cut time and then will automatically cut the vat based off that data.



A 200-pound Swiss cheese block exits the block forming and filling room, and enters the brine flume at Prairie Farms' Luana, IA, plant

Prairie Farms

Continued from p. 6

“It gives you some flexibility,” Kregel said. “It gives you monitoring capability of the coagulation itself. You control your sets a little better. You can see where you are and, if needed, make adjustments if you need to.”

Fred Payne is the developer of FluorLite and owner of Refletronics.

Payne said the FluorLite sensor monitors the milk, controls the cutting time and the gel firmness.

“We recognize cheese as an art. But it is backed by science and this is one of the great aspects of technology that keeps us on track and as consistent as we can.”

—Raymond Downes,
Prairie Farms

“The FluorLite cutting time control technology provides the most advanced process control available for monitoring and controlling the milk coagulation step in cheesemaking,” Payne said. “It provides control of the cutting time set-point and desired gel firmness.”

Kregel reviewed the last 10 vats made at the Luana operation. The numerical number assigned to each vat showed the firmness being consistent.

“Firmness gives you good indicators of moisture, whey retention, moisture control, etc.,” Kregel said. “The closer you can get to that at cut, the better control.”

Kregel said he trusts the sensors so much that the vats are now in auto-cut mode.

“This is state-of-the-art technology. I’ve got to think they’re pretty good,” Kregel said. “We’ve run them in auto ever since we put them in. We have our parameters and it watches the coagulum come to the gel-firming point. We are happy with them.”

Raymond Downes is the director of operations for the entire Prairie Farms Cheese division.

Downes worked alongside Kregel and Payne to put the FluorLite technology in at Luana.

“We recognize cheese as an art,” Downes said. “But it is backed by science and this is one of the great aspects of technology that keeps us on track and as consistent as we can.”

Downes acknowledges that not all vat operators are cheese makers.

“This technology takes the away the variable of having different operators,” Downes said.

“This keeps us on the mark. Keeping the vats as consistent as possible. They can push a button to acknowledge a step. With this technology we have been able to make the same piece of cheese January 1 through December 31 of every year. We’ve really come a long way in our consistency of our Swiss cheese.”

Payne said one of the unique features of the FluorLite sensor is in the PLC software that alerts the operator if no enzyme was added, confirms the addition of enzyme, and assists in establishing set-points for each recipe.

“That’s a nice feature. It tells you if you have rennet in there,” Kregel said. “Cheese quality never dropped off and actually improved because I think we are more consistent at this point in the process which is an extremely important part.”

The next phase of this technology for Prairie Farms is adding the FluorLite to cheese vats at White Hill Cheese, Downes said.

Prairie Farms Cheese Division

While the Luana operation is the largest cheese operation in Prairie Farms Cheese Division, the other five operations are also very successful and making highly sought-after products.

White Hill Cheese, which began as a joint venture operation in 2010, also produces Swiss cheese, and Baby Swiss, as well as other specialty varieties.

Downes said the White Hill facility is undergoing a line extension that will allow the company to make 12-pound wheels in addition to the 5-pound wheels they have been making.

In 2020, Prairie Farms acquired full ownership of the Shullsburg, WI, cheese facility.



Luana’s latest expansions include a new process room. The Alpma system fills the 200-pound cheese moulds with curd, presses the block, cures, and then de-moulds the cheese before hitting the brine.

While Prairie Farms is one of the leading producers of Swiss cheese in the US, the company also has two operations making award-winning Blue cheese.

Prairie Farms makes Blue cheese, Gorgonzola and affinage cheese varieties at its historic Caves of Faribault cheese plant in Faribault, MN.

Prairie Farms Mindoro, Mindoro, WI, also makes award-winning Blue cheese and Gorgonzola.

Prairie Farms’s Rochester, MN, plant, recently went through a renovation. The plant produces cold pack club cheese varieties and pasteurized process cheeses.

The acquisition of Shullsburg Creamery, also in Shullsburg, WI, boasts an expansive portfolio of varieties. The plant manufactures Colby, Monterey Jack, Pepper Jack, and Cheddar styles.

In 1938, a group of Illinois dairy farmers created Prairie Farms to improve market conditions for selling cream. By 1949, the company expanded its prod-

ucts to include bottled milk, cottage cheese and ice cream.

Today, the average size farm consists of approximately 120 milk cows.

The Luana plant was originally a milk drying operation owned by Mississippi Valley Milk Producers.

“Swiss Valley had a lot of small cheese plants. That was part of their growth,” Kregel said. “There were a pile of cheese plants nearby and they’d buy them, acquire their milk source, and then they’d consolidate operations. Many of those farms are still with us.”

The base of milk collection, Kregel said, is southern Minnesota, eastern Iowa, Wisconsin, and some from Illinois.

“The future is bright for this operation here,” Kregel said. “We have a great milk supply. To sit here and to watch it grow, especially since 2000, to where we are today, it’s impressive. I think this plant will be around a long time. It makes great products.”



It has been a privilege to be a part of the dairy industry for the past 10 years. Thank you to our employees, customers, and suppliers who have helped us along the way.

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