

# CHEESE MARKET NEWS®

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## Wastewater recycling helps reduce costs for dairy plants

By Rena Archwamety

**MADISON, Wis.** — Throughout the manufacturing process, efficient water management is important as dairy manufacturers aim to streamline costs and comply with regulations. As processors seek more efficient ways to dispose of or reuse water from their plants, wastewater solutions providers look at ways to meet the unique needs of their clients through various technologies.

Wastewater that would have been discarded 20 or 30 years ago now has value, says Greg Pesko, president and CEO, Membrane Systems Specialists Inc. (MSS), which offers pre-treatment, post-treatment and installation solutions for wastewater in addition to its membrane services.

“Polishing and reclaiming water has been a pretty active trend for the past 10 or 15 years,” he says. “People are more water conscious.”

This attention to water stems both from a desire to lower operating costs and from a need to meet certain regulations or company goals to protect the environment.

“All food processors face the same challenge,” Pesko says. “How can they provide food for everyone, yet tighten up their environmental impact as they’re faced with ever-increasing needs for production?”

Waterleau USA — which was created earlier this year after Belgium-based Waterleau Group acquired U.S.-based wastewater solution businesses Ecovation and Krofta Technologies — provides more than a dozen dairy companies with wastewater solutions. David Krasiewicz, business development manager, Krofta Technologies, says recently he has seen increasing interest in those looking at sustainability objectives, surcharge reduction and compliance issues.

“Some are in major cities or have growth in products like Greek yogurt,” he says. “Some plants didn’t have compliance issues before, but now they need better solutions or to

reduce operating expenses.”

Krofta, based in Dalton, Massachusetts, designs and supplies dissolved air floatation (DAF) clarifier systems for water treatment. This process uses micro air bubbles to attach and float particles and suspended solids to the water surface for removal. Waterleau USA also offers stand-alone and integrated membrane solutions that help dairy companies process wastewater back into process or drinking water, and anaerobic technology that generates reusable biogas from wastewater.

Pesko notes that it makes financial sense for dairy manufacturers to adopt technologies that allow them to make the most out of the water that goes through their plants.

“People pay for the water that comes in, and they pay to get rid of the water,” he says. “The milk stream is 90 percent water, so they ask, ‘What can we do to utilize that?’”

Polishing, Pesko explains, is used to recover water from process streams. This uses techniques such as reverse osmosis, conditioning and pasteurization to bring the wastewater back to potable water standards so that it can be used again in the plant for other applications such as reconstituting or cleaning. Concentrating wastewater streams can help separate water from oil, dairy proteins and other solids, Pesko adds.

“How can we remove water, that’s always the end game,” he says. “You don’t want to have to haul water away.”

### • Extracting value

Ensuring an adequate supply of high-quality water is important for any cheese facility, but so is ensuring that the water is effectively treated so it can be used after it leaves the facility, according to Jon Aibly, global responsibility lead, Leprino Foods. He adds that Leprino aims to get more use out of the same water molecules through higher levels of treatment and reuse in its facilities.

“Maintaining a mindset where water is viewed as a resource

throughout its use cycle whereby we are simply ‘borrowing’ it for our use before returning it for another beneficial use after it leaves our facility is essential,” Aibly says. “There is not a ‘one-size-fits-all’ approach to this thought process, as much consideration is given to local conditions and circumstance.”

Leprino’s plant in Greeley, Colorado, includes a complex, state-of-the-art treatment facility that cleans the water to strict standards before it is discharged into the Poudre River, Aibly explains.

“One of the initiatives we are pursuing today will extract more value from this water before it leaves our facility, while enhancing the quality of the effluent,” he says. “We are adding an anaerobic digester system to our existing treatment facility that will allow us to capture methane gas that is generated during the treatment process and use the gas to generate electricity that will help run the treatment equipment.”

Additionally, Leprino is exploring better ways to extract more value from the biosolids that are generated by the natural treatment process that takes place in its treatment facilities. These biosolids are high in nutrients and can be used as a replacement for commercial fertilizers commonly used in agriculture.

“Considering the scarcity of fresh water in many locations, enhancing our treatment capabilities in a way that allows us to potentially reuse the same water could further supplement and/or reduce the amount of externally supplied water needed throughout our facilities,” Aibly says

### • Customizing solutions

Pesko says while many large dairy processors now have systems in place to effectively clean, concentrate and reuse wastewater, he anticipates smaller companies increasingly will adopt these technologies as well.

“The big guys need to have these tools in place, but it will be pushed down further, so smaller producers will have the same things in place,” Pesko says. “Smaller companies are

saying, ‘How is this going to impact us? Can it still be affordable and help maintain operating expenses?’”

Ryan Johnston, sales and business development manager, Waterleau USA, says the company has the flexibility to customize wastewater solutions to customers’ unique needs and various sizes. She notes that Waterleau USA offers modular and portable rental units to allow companies to use its technologies on a smaller scale or for temporary needs.

“Anaerobic technologies can be out of reach for some smaller companies, but we’ve developed a smaller modular unit that is constructed in Massachusetts and can be shipped out to the site,” she says. “We have had a ton of interest in it.”

Krofta also has a large fleet of rental DAF units that can be deployed for temporary use as a plant undergoes expansion or as a means for companies to test out Krofta’s DAF technologies before implementing them permanently into their facilities.

“Especially in the dairy industry where profit margins are tight, Krofta has large rental units up to 600 gpm that companies can try out and rent for a couple of months to make a firm decision on whether the investment matches the return they’re getting for that design,” Krasiewicz says. “Validating the technology before they install it has been very popular. Customers will try the system, see what benefits it has, and then install the permanent solution.”

Pesko says while wastewater solutions may not create a direct revenue stream, they do help streamline other costs and processes to help contribute to a manufacturer’s bottom line.

“I think the payback is, every day you need water, and every day you have discharge. As operations look at how to become more cost effective, if they lower water requirements, they lower other costs,” he says. “People are more inclined to put an effort into wastewater now.” **CMN**