

Inner Workings

Cheeseless Cheese Company Uses Speed-of-Light Drying

Creating a line of nutritional products was not what Frank Stout planned in 1985 when he purchased a goat farm and cheese plant. But, like his products, the transition from dairy farmer to nutritional retailer was all natural.

our marketing potential. We could now be an international player.”

But, Mt. Capra needed a time-efficient, cost-effective method to evaporate and dry the milk and whey — a system that would retain the purity and protein



The Refractance Window dryer uses simple principles of convection, conduction and infrared energy from hot water instead of high heat.

Stout, CEO of Mt. Capra Products Inc. in Chehalis, Wash., manufactures and retails all-natural dairy-based nutritional supplements. Mt. Capra's cheese plant was founded in 1928 with the philosophy that the best and healthiest foods are those that are all natural. The company also raises its own goats for its key ingredients.

Stout initially focused on cheese production, but in the 1990s, his attention was drawn to the growing national trend in dairy-based nutritional supplements.

“We were making small batches of low-moisture aged cheese — a very slow and exacting process when we tried evaporating milk and drying whey,” Stout says. “Changing our product line from cheese to nutritionals greatly expanded the size and scope of

of raw milk and not compromise its healthy benefits. The company found what it needed in Refractance Window dryers from 20-year old Tacoma, Wash.-based MCD Technologies Inc.

MCD manufactures and sells dehydrators, evaporators and accessories for food processing and the nutraceutical, pharmaceutical and chemical industries. Refractance Window heat transfer technology uses water to transmit energy at the speed of light to dry products.

“We tried other methods, and they weren't really working for our purposes,” Stout says. “We were right on the cusp of saying that making nutritionals with whey from our goat's milk was the direction we wanted to take, but we couldn't until we found an efficient

drying method that wouldn't compromise the benefits of raw milk. Without the Refractance Window dryer, we wouldn't have been able to produce in volume. We needed this machine for daily production.”

Using simple principles of convection, conduction and infrared energy from hot water instead of high heat, the RW dryer, a compact single piece of equipment, gently and efficiently dries the liquid from the milk in a fraction of the time required for previous methods. Low temperature far-infrared heat protects and preserves nutrients that would be lost in high-heat drying. Because RW technology uses recirculated low heat, the system is two or three times more energy efficient than many other dryers, according to the manufacturer. Drying could take hours or days with traditional equipment, but according to MCD, the RW dries most materials within four to five minutes.

MCD tailored the dryer to Mt. Capra's application requirements, making sure the equipment conformed to the plant's layout and infrastructure, and trained the Mt. Capra operators. Employees place liquid whey on an impermeable conveyor that moves slowly through the dryer. When it reaches the end of the dryer, the whey is dry and ready to be ground into powder form and formulated into capsules or prepared as a powdered formula.

Mt. Capra uses one RW dryer, which puts out between 500 and 700 lb of dried whey during a regular eight-hour shift. Stout says the MCD dryer has helped position his company as an international player in nutritional supplements and products.

“We manufacture in one day what would have taken us a week,” he says. “The dryer is the real deal ... it performs consistently without being overengineered. It is very user friendly. Anybody who has spent any time producing delicate food products knows that one small change in procedure can make or break the outcome of what you are after.”