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Munson's SCC proves more effective than hammer mill

Jewel Date Company has utilised Munson's Screen Classifying Cutter to reduce dried dates into granules and powders, which has worked out far more effectively than the previous hammer mill

Jewel Date Company grows, processes, packages and ships approximately 3.6 million kg of dates and date products a year. In addition to selling whole and diced dates, the company grinds dates into flours, granules and powders it sells as ingredients to leading food manufacturers, such as bakeries, and directly to consumers through its online store.

Munson Machinery company supplies industrial equipment such as ribbon blenders, rotary batch mixers, rotary continuous mixers and continuous variable intensity mixers to the food sector. Their innovative Screen Classifying Cutters reduces friable, semi-friable, fibrous, semi-hard and hard materials into controlled particle sizes at high rates with minimum fines. It has already been used by leading manufacturers as it performs like a knife cutter but handles a great diversity of materials and retains sharpness far longer.

Jewel Date Company utilises a Munson Screen Classifying Cutter to reduce dates into granules and powders within narrow size ranges. Harvested dates are air-dried for two days to reduce moisture content from 50% to 7%, causing the dates to harden. "Anything greater than 7% and the dates will clump during processing," explains John Ortiz, Jewel Date Company. The dates are then cooled, loaded into a hopper and forklifted to a conveyor that transports them to the 28cm wide throat of the cutter.

The company previously utilised a hammer mill which offered less capacity and particle size control. "It took an eight-hour shift to process 907 kg of dates using the hammer mill, versus one hour to process the same volume using the SCC cutter, increasing our productivity eight-fold," recounts Ortiz. Unlike a hammer mill in

which a series of hammers strike and break the material until it passes through a bed screen, the screen classifying cutter employs solid stainless-steel cutter blocks that are welded without seams in a staggered array, and have machine sharpened cutting edges that can be re-sharpened.

With the variable speed motor, the plant can run the cutter at 1,500 rpm to produce particles down to 1.6 mm, or at 1,200 rpm for particles down to 4.8 mm. "We can adjust the speed to output powders or granules according to customer requirements," says Ortiz. The cutter reportedly imparts little or no heat to the material, which is critical because frictional heat or heated equipment surfaces cause date powders and granules to melt and clump.

The reduced material exiting the cutter is transferred by a flexible screw conveyor to a vibratory screener that, in turn, discharges onto a belt conveyor for manual inspection and metal detection before being packaged and weighed for shipping. Ortiz says, "The Screen Classifying Cutter has not required parts or maintenance in

its first four years of operation, and it has fewer moving parts than our hammer mill." He adds, "Stainless construction with a food-grade finish allows us to clean it quickly."

Date palms grow in the Coachella Valley, a region of California's Sonoran Desert, where temperatures range between 41°C and 49°C in the summer and rainfall averages 2.54cm per year. The desert's hot, dry conditions and sandy soil are ideal for growing dates. The trees cannot tolerate humidity or rain, yet they require a lot of water. Therefore, the company employs a combination of drip and flood irrigation methods using water from the Colorado River and underground wells.

"Dates are naturally sweet and nutritious," says Ortiz. "They're a great binder, and they're stable. So, we sell a lot of dates to companies that make nutritional bars." Dates are also popular in granular or powder form as a natural sweetener. "We have several customers that use date powder as a sweetener in their teas," says Ortiz. "The powder of dates is 100% raw fruit, with no additives or preservatives."

