

# FOOD

# ENGINEERING

THE MAGAZINE FOR OPERATIONS AND MANUFACTURING MANAGEMENT



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## Streamlining supplement production

*Tailwind Nutrition shaves minutes off cycle time with Munson rotary batch mini mixer*

Complete discharge of the rotary batch mini mixer enables thorough cleaning and sanitizing.

achieving blend uniformity and preventing material degradation.

### ELIMINATING SHEAR

The plant was using a rotating 7-cu.-ft. (198 l) capacity drum with a skewed internal shaft and blades that imparted unwanted shear into the mix, Vierling explains. "The unit also generated dust and was difficult to clean," he adds. So Tailwind installed a 15-cu.-ft. (425 l) capacity Model MX-15-SS Rotary Batch Mini Mixer from Munson Machinery, Utica, N.Y., which Vierling says offers benefits over his

drum's interior wall impart a four-way tumble, turn, cut and fold mixing action, achieving batch uniformity in two to three minutes (half the time of the previous mixer) with no degradation or dusting. It elevates material toward and through a plug gate valve during discharge while rotating, preventing stratification or segregation.

A smaller version of the company's full-scale blenders with capacities to 600 cu. ft. (17 m<sup>3</sup>), the mini mixer discharges with no residual into a hopper, and the product is then packaged in two sizes of pouches or single-serve packs.

Vierling says the lack of an internal shaft reduces the cleaning process to a sanitizing water wash through the stationary inlet and outlet. Additionally, the vessel air dries in 20 to 30 minutes. \*



**ULTRA-MARATHONER** Jeff Vierling started Tailwind Nutrition, Durango, Colo., for himself and fellow runners, cyclists and triathletes who rely on nutritional supplements to sustain energy during long-distance races.

Vierling says the formulations in nutrition drinks, gels and bars were ineffective for him as an athlete, and so he set out to start his own line of supplements, composed of proprietary blends of dextrose, sucrose, fructose, electrolytes, amino acids, coconut milk proteins and caffeine. With sales the first half of 2018 doubling over the same period in 2017, Tailwind needed to boost production of its supplements while maintaining their potency by

previous mixer.

For example, loading a 100-lb. (45 kg) batch into the previous mixer from manually dumped 50-lb. (23 kg) bags required 10 minutes, compared to five minutes to load 500 to 700 lb. (227 to 317 kg) into the new mixer, plus an additional minute to manually add buckets of secondary ingredients.

Like the previous mixer, the mini mixer tumbles the batch but lacks an internal shaft, instead rotating on external twin roller bearing assemblies, which simplifies the cleaning process. Internal mixing flights affixed to the



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