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Tea Blend Time and Degradation Cut with Rotary Mixer

When Choice Organic Teas was founded in 1989 by Granum Inc., it launched the first exclusively organic tea brand in the U.S. The company offered only four choices of organic teas—Green, Ban-cha, Twig and Oolong. Today, it offers more than 75 varieties of certified organic, sustainably grown teas and herbal infusions.

(By Steve Knauth)

Competition in the organic tea market has grown along the way, Choice Organic Teas has remained true to its sustainable business practices, and is one of a select few tea crafters in the country that owns and operates its own tea packaging equipment.

It recently moved into a new facility that is certified organic, meaning that all product handling and packaging is done in a safe and environmentally friendly way in accordance with, or exceeding, the U.S. Dept. of Agriculture's National Organics Program regulations. All of the company's teas are packaged using recycled and unbleached materials, and blending and packaging are performed using energy-efficient equipment. It's a process the company has fine-tuned over its history of crafting organic teas.

In 1990, Choice Organic Teas was using a 10 cu ft (0.28 cu m) capacity, food-grade, modified cement mixer to blend up to 30 lb (13.6 kg) of tea per batch. During the mixing process, however, the mixer had to be stopped and opened several times, both to add flavoring and to address unblended areas, which significantly slowed the blending process.

"The modified cement mixer lacked a baffle system like that in the mixer we use today," explained Rod Hanson, quality assurance manager at Choice

Organic Teas. "Because of this, there was a dead zone in the middle of the mixer where the tea would not properly blend, and this area had to be manually scooped and stirred, after which the machine could be restarted."

Long mixing cycles degraded the delicate tea leaves, while frequent stoppages and low capacity meant that an entire workday was lost blending enough batches to yield 240 lb (109 kg) of blended organic tea, according to Hanson.

As the company grew, it added increasingly sophisticated bagging equipment (the most recent of which produces staple-less tea bags by automatically tying the tag onto the bag), and eventually replaced its blender with a 15 cu ft (0.42 cu m) capacity MX15-SS mini rotary batch mixer manufactured from Munson Machinery.

Blender Eliminates Waste, Blends Uniformly

"The Munson mixer revolutionized our blending operation," says Eric Ring, Choice Organic Teas purchasing manager. "It allowed us to do large amounts of blending with no ribbons of non-blended ingredients, yet gently enough that it didn't damage the tea."

The stainless steel Munson blender uses a gravity-driven mixing process,

which employs internal mixing flights that produce a tumble-turn-cut-fold mixing action said to yield 100% batch uniformity in less than three minutes using minimal energy. However, the company runs the mixer continuously for 15 to 20 minutes per batch to prevent stratification of ingredients throughout loading and final discharge with no residual.

Average weights for each batch of tea range from 150 lb to 300 lb (68 kg to 136 kg), depending on the type of tea. "Teabag cuts, which are finer than leaf tea, can be mixed at higher weights—up to 320 lb (145 kg)—because they're stronger and heavier," says Ring. "Leaf teas are mixed in smaller batches to protect the leaf."

Some blends have only two to three ingredients, while others require 10 to 12. "We choose hundreds of different organic certified ingredients from select tea gardens and vendors worldwide," explains Hanson. The company supports organic agriculture as well as fair trade practices. In fact, it was the first tea crafter in the U.S. to offer Fair Trade Certified tea, which ensures safe working conditions and fair wages for workers.

"We have specific recipes for our blends that are formulated pre-production for our many bagged tea and whole leaf offerings," says Hanson. "Our master blender adheres to these blend sheets when weighing out specific ingredients for each blend and knows through experience, the blend time necessary for each batch," he adds.

Internal spray lines built into the mixer allow for a wide, even spray of natural flavors. For instance, oil of bergamot is added to the company's Earl Grey tea. "We choose from a variety of nozzles based on the viscosity of the flavor," explains Ring. "Using the internal spray system and a specific nozzle, we are able to pressurize the flavor and apply it widely and uniformly as the tea tumbles, resulting in uniform distribution with no saturated areas." The internal spray system is also used for cleaning the blender between batches. "We have a nozzle that allows a strong flow of our own special formula for

An inside look at the tea blend and degradation process at Choice Organic Teas with the help of the Munson Rotary Mixer





Dry leaf tea from Choice Organics. Picture taken by Matthew G. Monroe, 2007

flavor neutralization and cleaning between batches,” adds Ring.

“Once the tea is blended, internal baffles elevate the batch and direct it through a stationary discharge chute,” explains

Hanson. The mixer is self-emptying and free of any dead areas or shaft seals that can trap materials, resulting in total discharge without waste. “The tea passes through strong magnets that remove the

possibility of any foreign metal material, while a vacuum reduces dust associated with discharge,” he adds. Blended tea is then transferred to a packing station.

Choice Organic Teas offers 27 loose leaf tea varieties, which are packaged in 100% biodegradable kraft paper bags lined with glassine. Eight whole leaf varieties are packaged in biodegradable mesh pyramid tea bags. Twenty-seven varieties of classic and traditional blends and 13 gourmet blends are packaged in unbleached filter paper envelopes and 100% paperboard boxes. The company’s Original line is packaged in unbleached, staple-free tea bags and is 100% compostable.

Choice Organic Teas is committed to sustainable and environmentally conscious manufacturing. It purchases 100% wind energy for its facility and purchases energy-efficient, long-lasting equipment. Its ten-year-old blender, for instance, will likely be mixing ingredients for at least 15 more years, says Hanson. ☕

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