

ASIA PACIFIC

FOOD INDUSTRY

PROCESSING • PACKAGING • FLAVOURS & ADDITIVES • STORAGE & HANDLING

Established since 1985 | www.apfoodonline.com

JANUARY/FEBRUARY 2012



market outlook 2012



Automation
Evolution
FOR ASIA

Keeping It
Together

GM Food:
Labelling
And **Testing**

Shots
FOR ALL

Case Study: **Cut Blend Time & Degradation**

WHEN Choice Organic Teas was founded in 1989 by Granum, it launched the first exclusively organic tea brand in the US. 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.

It recently moved into a facility that is certified organic, meaning

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 109 kg of blended organic tea. By **Steve Knauth**, general sales manager, Munson Machinery

that all product handling and packaging is done in a safe and environmentally friendly way in accordance with, or exceeding, the US Dept of Agriculture's National Organics Program regulations.

DEAD ZONE FOR BLENDS

All of the company's teas are packaged using recycled and unbleached materials, and blending and packaging are performed using energy-efficient equipment. In 1990, the company was using a 0.28 cu m capacity, food-grade, and modified cement mixer to blend up to 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 flavouring and to address unblended areas, which significantly slowed the process.

"The modified cement mixer lacked a baffle system like that in the mixer we use today," explained Rod Hanson, the company's quality assurance manager. "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 109 kg of blended organic tea, according to Mr Hanson.

As the company grew, it added increasingly sophisticated bagging equipment, and eventually replaced its blender with a 0.42 cu m capacity mini rotary batch mixer.

WASTE ELIMINATED

The stainless steel blender uses a gravity-driven mixing process, which employs internal mixing flights that produce a tumble-turn-cut-fold mixing action. This is said to yield 100 percent 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.



Mixing flights produce a tumble-turn-cut-fold mixing action that yields batch uniformity in less than three minutes.



An employee loads ingredients into the mixer. Tea blends contain from two to 12 ingredients.

Average weights for each batch of tea range from 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 145 kg — because they're stronger and heavier," says Eric Ring, purchase manager. "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.

Internal spray lines built into the mixer allow for a wide, even spray of natural flavours. For instance,



The mixer is self emptying resulting in total discharge and no waste.

oil of bergamot is added to the company's Earl Grey tea. "Using the internal spray system and a specific nozzle, we are able to pressurise the flavour and apply it widely and uniformly as the tea tumbles, resulting in uniform distribution with no saturated areas," adds Mr Ring. The internal spray system is also used for cleaning the blender between batches.

"Once the tea is blended, internal baffles elevate the batch and direct it through a stationary discharge chute," explains Mr 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.

The 27 loose leaf tea varieties are packaged in 100 percent 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 percent paperboard boxes. The company's original line is packaged in unbleached, staple-free tea bags and is 100 percent compostable.

APFI

For more information,
ENTER No: 0141

