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Steady grip

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Designed with on-the-go children in mind, Dole Squish'ems! are packed in standup pouches with resealable, safety caps. The pouches are designed for easy one-handed product delivery, which can encourage independent eating by young children.

Dole's healthy squeeze

Fruit puree in **RESEALABLE, SPOUTED POUCH** helps parents squeeze healthy snacking into hectic lifestyles

Linda Casey, Associate Editor

Peter Stewart, senior business development and sales strategy manager for Dole Packaged Foods Canada, Markham, Ontario, has a solution for any parent who has ever had their child's snack become the backseat decor of their vehicle.

In June 2008, Dole Packaged Foods Canada launched Squish'ems! The fruit puree is packed in Cheer Pack spouted pouches from **CDF Corp.** The spout is wide enough to allow the puree to dispense freely, but it is narrow enough to prevent the puree from spilling easily from the package. The pouches also have a resealable cap.

The Dole team was inspired by a similar product delivery system used for apple sauce in Europe. "We saw how successful the product with this format had been in Europe, and we know Europe is ahead of North America with their packaging ideas," Stewart remarks. "We agreed that if we could bring this package to North America, we would be ahead of the curve."

The problem with being ahead of the curve often is that a roadmap to implementation has not yet been drawn.

Path to market

"We saw the European packaging about two and a half years before we actually ended up launching the product," Stewart comments. "It's been a long, tortured path to the market. When we

started this project there were I think two machines in all of North America that could do this."

The Dole team found a copacker in upstate New York that was set up to work with the spouted pouches. "But it was a small company, and they eventually went out of business," Stewart recalls.

At this time, Stephen Fairfield was consulting for a state-of-the-art form/fill/seal facility in Mississauga, Ontario, which was suffering with poor sales. Recognizing an opportunity, Fairfield and a investment partner incorporated **Eco-Container Corp. (ECC)**, and they began negotiating the purchase of the business.

ECC then began talks with Dole regarding the Squish'ems! project. Specifically, Dole wanted to know if the facility ECC would be purchasing could fill fruit puree into Cheer Pack pouches.

"As it happened, the negotiation



for the facility went south,” Fairfield remarks. “We had a production contract done and signed with Dole, and no place to put the equipment, and the clock was ticking for the launch target date.”

Packaging operation built on demand

Eager to get the Squish-ems! product to market, Dole Canada then enlisted the help of the packaging manufacturer CDF Corp. “Dole led us to Eco-Container and said, ‘Talk to them about doing the copacking and everybody kind of rolled up their sleeves and got it done,’” recalls Steve Gosling, CDF Corp., director of sales for Cheer Pack North America.

The companies identified the packaging machinery, including CHP40 fillers from **Gualapack S.p.A**, that would be the best fit for the packaging application. ECC then created a new copacking business model that would ensure that the new operation would be sufficiently capitalized.

“Our business model is to go into an existing facility that has the trained staff, and infrastructure, QC, logistics, accounting departments, etc. and we fund and maintain the equipment” Fairfield explains. “The facility’s owner has the advantage of no capital expense or ongoing maintenance costs, and secures a better asset utilization. ECC covers the variable costs of running the equipment and provides a simple profit allocation.

“And the investment bankers like the model as the entry cost is lower, which in turn provides for a competitive costing to the trade—so, it’s a good financial model,” Fairfield adds.

Fillers perform like little tanks

Canadian grown and processed apple sauce, which is the main ingredient in all Squish’ems! varieties currently on the market, arrives at the copacking facility in large totes. The apple sauce is mixed with the other fruit-based ingredients according to Dole’s recipes.



The flexible pouches arrive at the copacker on preloaded rails. They are loaded into the filler through a magazine on the machine. After filling and capping, the pouches exit through the filler’s delivery chute.

After mixing, the purees are heat-treated in a simple steam injection, tube-in-tube pasteurizer that has been modified with a heat exchanger to control the steam. Quality-control checks are conducted at a minimum of every half hour. Often, these checks are done every 15 minutes.

From the pasteurizer, the purees go into two separate, but synchronized CHP40 fillers. “They’re well built, fairly simple in design and solid,” says Fairfield. “Depending on fill amounts, and pouch capacity, each filler can run between 40 and 44 pouches per minute, with larger pouches easily accommodated with minimal adjustment or downtime. The model is calculated to deliver an 83-percent production efficiency on a 24-hour shift, resulting in close to 96,000 pouches or approximately 8,500 kg of puree.

“The Gualapack fillers can handle a wide range of viscosities,” he adds. “Fruit piece identity is possible, though it is limited to a fairly small size in order to clear the valving and fit through the pouch’s neck.”

Pouches arrive at the copacking facility preloaded onto rails, which enables quick loading into the filler’s magazines. All Cheer Pack pouches are vacuum-checked by the converter before delivery to a packaging operation. Evacuating the air from the packaging also enables the fillers to quickly push product into the pouches.

After the pouches are filled and sealed, they travel to a post-fill steam tunnel where they receive a second heat treatment to more than 90 deg C to



Before packing pouches into cartons using a special inserting pattern, workers straighten the pouches. This improves pouch presentation in the cartons’ windows.



Traveling toward the master case packing area, cartons move up a stack then are ejected down a chute.

further ensure product safety. The pouches exit the steam tunnel and then are dropped into a cooling bath, where they are cooled to a range between 30 and 35 deg C. In the drying chamber, the cooled pouches are dried by air knives. All machinery is from Gualapack.

Each pouch is coded by a **Leibinger** printer with the date, time and filler information. Coded and cooled pouches are conveyed to manual pack-out area, where personnel manually shape the packaging to provide the smoothest appearance possible. The pouches then are packed according to a specific insertion plan into brightly printed paperboard cartons manufactured by **Cascades**, which also supplied the case former and sealer.

Dole considers the flexible packaging as a competitive advantage, and it didn't want the secondary packaging to prevent prospective consumers from being able to interact with the pouches when the product was on store shelves.

"We wanted a window so people could poke it and feel it and touch it," Stewart recalls. "The problem is that when you open up a carton, the window allows the product to move around. And it doesn't present itself well within that window."

Working with Cascades, Dole developed a final carton design and an insertion plan to ensure that product would remain secure in the carton and the pouches would display nicely through the secondary packaging's window.

Four pouches are inserted into each carton: Two with their caps up and the other two cap-down. Packing line personnel then hand-pack 12 Squish'ems! cartons into a master shipping case.

Keeping the product and children safe

Engineered to have a 12-month shelf life, the Cheer Pack configuration used for Squish'ems! is a PET outer layer, laminated to aluminum with an inner sealant layer of PE.

The PET layer imparts a high-gloss finish, which shows off the eight-color gravure printing done on a **Cerutti** press by CDF partner **Hosokawa Yoko**.

The laminate structure also allows the product to be stored in

a wide range of temperatures. The packages can withstand very cold temperatures, with some parents reporting success freezing the pouches. Yet, the same pouches are hot-filled during the packaging process.

Each pouch is sealed with a large-diameter, screw-on, safety cap from Gualapack. "This cap is 32 mm in diameter," Gosling explains. "This means it won't pass through the choke tube, therefore it's considered to be child-safe." According to Gosling, the cap meets the U.S. Consumer Product Safety Commission, Small Parts Regulations, 16 C.F.R. Part 1501 and 1500.50-53.

Explaining an additional safety feature to the cap, Stewart states, "If a child did happen to swallow it, it's made with enough venting and air holes that it wouldn't create a total blockage."

Gualapack was awarded U.S. patent D547, 657 S for the cap design.

Single-serve fruit strategy

Squish'ems! is performing well as part of Dole Canada's single-serve fruit market strategy, of which products designed for children is a major component. The food processor plans to expand the product line in 2010, given the right economic conditions, with two new flavors—grape and cherry.

Other groups within Dole are evaluating the product for their regions. The U.S. group plans to develop a similar product that caters to sweeter taste preferences of American consumers.



Packed cartons are closed in preparation of sealing and case packing.

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