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Holistic approach to nutraceuticals

By Linda Casey, Senior Editor -- *Packaging Digest*, June 1, 2011



To launch its certified organic line of dietary supplements, Futurebiotics LLC, Hauppauge, NY, created new packaging and updated its packaging process to gain organic certification from NOFA-NY Certified Organic LLC.

"We had to either find somebody that could manufacture the products and maintain all of the organic certifications or we had to become certified ourselves and make our own product and meet all the regulations," says Grace Lyn Rich, director of trade marketing at Futurebiotics. "I don't think consumers realize what's entailed not to lose that certification; how carefully you have to handle the ingredients so you don't lose the certification. You can use ingredients that weren't grown with pesticides and still not be able to claim that your product is certified organic."

Because product formulation, ingredient procurement and packaging were equally essential to earning organic certification, all three projects were led by a single person, Vidhan Jaiswal, senior scientist, research and development at Futurebiotics LLC. Jaiswal developed the formulations over a three-month period, then started working in concert with Bharat Patel, who manages manufacturing and packaging for Futurebiotics, on identifying how to have an existing packaging line, which was installed in

2007, become certified organic.

First and foremost in the process was identifying the critical control point or points. "The biggest challenge that Futurebiotics and most operations that are making products like this is the segregation of organic and nonorganic ingredients and products throughout the process and also preventing contamination from conventional products, cleaning materials, pest-control materials, etcetera," Sherrie Hastings, handler certification coordinator for NOFA-NY Certified Organic, explains. The place where this comingling could occur is called the critical point.

While the identification and management of the critical control point at tablet filling is the line project achievement that Patel is most proud of, it wasn't the only primary factor in achieving certification. He says that special attention needed to be paid to the equipment cleaning process and what is used to clean the equipment. "Anytime we package organic products, we have to totally clean the room-not only all the machines and conveyors but also the floor and walls," Patel explains.



3 top project objectives

- Create a look that reflects the organic, minimally processed ingredients.
- Update a former conventional packaging line for filling organic-certified supplements.
- Design packaging structures using materials that protect the products' organic ingredients.

"We clean everything, and we don't use any alcohol," Jaiswal adds. The use of isopropyl alcohol would cause Futurebiotics to lose its certification so it only permits the use of chlorine bleach as a sanitizer when packaging organic products.

"In the National Organic Standards, there's a section that's called the national list of allowed and prohibited substances," Hastings explains. "Some of the allowed substances are synthetics that have been reviewed and determined to be OK to use in certain circumstances: Chlorine is one of those products, but it has a restriction that the residuals can't exceed the maximum safe water drinking limit."

She urges packaging operations managers wishing to have their operations certified organic visit the USDA-AMS' National Organic Program website for guidance. "There's a lot of good information there, including a question-and-answer section and even the training modules used by certifiers," Hastings remarks. "In some areas of organic certification, it's not black-and-white; some of the standards might be slightly gray. These training modules help give certifiers clarification as to the intent of the rules."

Wise choices

Jaiswal credits Patel with navigating the myriad of minutiae involved in the certification process as well as the installation of an adaptive line to begin with. "We keep saying it's teamwork that led to the success of the project," Jaiswal remarks. "All the credit for the packaging line belongs to Mr. Bharat Patel. He was the one who actually selected each and every component of that packaging line and made it such a robust packaging line that it handles not only organic but also conventional packaging with ease. Maintenance-wise, equipment-selection wise and running-it's all Mr. Bharat Patel."

The first machine on the line is a Kaps-All Packaging Systems Inc. AU3 bottle orienter. "Because we're using glass bottles, we had to handle them very gently," says Patel. This unscrambler, with its small footprint, gently single-files, then orients the glass bottles, supplied by Penn Bottle and Supply Co., to an upright position before they exit via a takeaway conveyor for the next downstream operation.

The bottles travel under a Modular Packaging Systems Inc. VC 12 tablet counter. The 12-channel electronic counter uses a vibratory-feed system to move the nutraceuticals down a stainless steel tray and down past a sensor array. "The 12 individual sensors accurately count product as it passes through the sensors," says Andrew Smith, sales manager for Modular Packaging, who sold and installed the system for Futurebiotics. "What's nice about the VC-12, though, is it has a lot of flexibility: It can run very small tablets to very large capsules. The VC-12 doesn't require any change parts; the machine is simple to disassemble and reassemble; and because it has a limited number of contact parts, the machine is easy to clean."

In addition to the nutraceuticals, each bottle receives a portion of cotton dispensed by a Deitz Co. Inc. Pharmafill cottoner and a 0.5-g packet of silica gel, which is dispensed by an Abox Automation Corp. desiccant dropper. Caps, with induction seals already in place and supplied by Package All Corp., are screwed onto the bottles by a Kaps-All capper. An Auto-Mate Technologies LLC induction sealer is used to secure each seal onto its bottle.

For additional consumer safety, a tamper-evident neck band is placed onto each bottle by a Marburg Industries Inc. M6 shrink labeling and banding machine before it travels through a Marburg HT1 heat-shrink tunnel.

A wraparound label, supplied by Overnight Labels Inc. and with an unusual jagged edge, is applied to each bottle by a



The filler uses a 12-channel system to move tablets past a sensor array, ensuring accurate counts for each bottle.

Quadrel Labeling Systems Versaline labeler, and a Videojet Technologies Inc. coder puts a lot number and date code on each container. The completed bottles continue to travel along the 4-in.-wide plastic-chain conveyor belt supplied by Modular Packaging Systems Inc., until they reach rotary accumulation tables supplied by Deitz Co. Accumulated bottles are manually loaded into plastic totes and moved to a manual cartoning station, where line workers erect paperboard cartons, supplied by Beyer Graphics Inc.. Labels, which receive lot and date codes from a Videojet Technologies Inc. printer, are manually placed on the bottom of cartons.

Twelve cartons are manually placed into corrugated shippers, supplied by Lanco York Inc., which are sealed using an EZ-Tek Industries Inc. case taper. Shippers are manually built into product pallets, which are secured using an Orion Packaging LLC stretch wrapper.

Challenging materials

Workers must carefully erect each box, ensuring that a specially designed insert to secure the glass bottle is properly placed. This insert was die-cut by Beyer Graphics using a Bobst Group N.A. Inc. Speria, and the entire carton was finished using a Bobst Fuego folder-gluer. Futurebiotics was insistent on using glass to preserve the product quality. "We believe glass preserves the integrity of the herbs, vitamins and nutrients," Rich explains.

Futurebiotics also was insistent on creating an affordable box with an aesthetic that conveys the product's natural ingredients while offering good reads of crisp codes.

"We knew we didn't want just a plain, white, glossy board or just a solid color," Rich recalls. "We wanted this earth tone, these speckles

that kind of look like raw paper, if you will."

Jaiswal adds, "I actually call it the 'carefully conceived, careless look' of our label and box." This carefully conceived look was designed in collaboration with Redhead Design and Beyer Graphics.

"Instead of spending the extra money on the stock, we were able to create that look with printing," remarks Dan Beyer of Beyer Graphics. Creating the overall look on regularly stocked paperboard helped Futurebiotics avoid the prohibitive expense of a specialty paper and a large minimum order.

Printing the background on Forest Stewardship Council-certified 18-pt Clearwater Paper Corp. Candence SBS also prevented noise from entering the QR (quick response) code on the box, which will make it easier for consumers to visit the brand's website and reorder supplements or try new products.

"We are seeing more and more of the QR codes," says Beyer, referring to the trend noted by him, his brother, Bill, and his father-company founder William. (Beyer praises his father highly for his ability to see trends starting from when he moved the company's business from producing tags for the American garment industry to converting and printing packaging.) The QR code trend doesn't surprise them. "They are not technically challenging to print compared to a regular bar code," he notes. So QR codes can be an easy way to drive traffic to a brand's website.

To create the speckled tone background that surrounds the QR code, Beyer Graphics prepress operator Tara Colao worked with Redhead Design. The prepress files then were prepared using EskoArtwork software; hard proofs were made using a Kodak Graphic Communications Group Approval digital color imaging system; plates were imaged by Fujifilm Holdings America Corp. thermal platesetter; and final cartons were printed using a six-color Komori America Corp. LS 640 press.



To convey the naturalness of the organic ingredients inside, the bottles sport labels with a jagged edge. This effect was accomplished using a specially made die.

This design then needed to be replicated for the bottle labels. The primary challenge here, says Don Earl, founder and president of Overnight Labels, was accommodating for differences in stock substrates. From the beginning, he notes that there's a significant difference between the carton's paperboard and the high gloss, matte lamination label stock.

Using a carton flat as a sample, Overnight Label adjusted the prepress files to closely match the cartons. An Aquaflex press printed the Fasson label stock, supplied by Avery Dennison Label and Packaging Materials, using CMYK water-based inks, in addition to two spot colors. To further convey the naturalness of the nutraceutical products, Overnight Labels used a custom-made die to place jagged edges on both ends of the label. This required extra attention from Overnight to make sure that the excess label was cleanly stripped from the roll versus a straight edge, which pulls more cleanly.

Overnight Labels also provided die-cut blanks to Patel to ensure that the jagged edges would work with Futurebiotics' wraparound labeler.

Dressed to grow

The organic product line and its carefully conceived look are being well received by consumers. At time of publication, Futurebiotics is nearing capacity on its existing packaging line and is working on installing a third packaging line that can run at twice the speed of its current organic-certified line.

Abox Automation Corp., 973-659-9611.
www.aboxautomation.com

Aquaflex, a branch of F.L. Smithe Machine Co. Inc., 814-695-

5521.

www.chromas.com

Auto-Mate Technologies LLC, 631-727-8886.

www.automatetech.com

Avery Dennison Label and Packaging Materials, 800-944-8511.

www.fasson.com

Beyer Graphics Inc., 631-543-3900.

Bobst Group North America Inc., 973-226-8000.

www.bobstgroup.us

Clearwater Paper Corp., 866-768-5282.

www.candesce.com

Deitz Co. Inc., 732-681-0200.

www.deitzco.com

EskoArtwork, 937-454-1721.
www.esko.com

EZ-Tek Industries Inc., 800-796-3279.
www.eztek.com

Forest Stewardship Council, 612-353-4511.
www.fsc.org

Fujifilm Holdings America Corp.,
800-877-0555. www.fujifilms.com

Kaps-All Packaging Systems Inc.,
631-727-0300. www.kapsall.com

Kodak Graphic Communications Group, 866/563-2533.
www.graphics.kodak.com

Komori America Corp., 847-806-9000.
www.komori-america.us

Lanco York Inc., 631-543-3337.
www.lancoyork.com

Marburg Industries Inc., 760-727-3762.
www.marburgind.com

Modular Packaging Systems Inc., 973-970-9393.
www.modularpackaging.com

NOFA-NY Certified Organic LLC,
607-724-9851. www.nofany.org

Orion Packaging LLC, 800-333-6556.
www.orionpackaging.com

Overnight Labels Inc., 631-242-4240.
www.overnightlabels.com

Package All Corp., 631-472-7200.
www.packageall.com

Penn Bottle and Supply Co.,
610-521-6000. www.pennbottle.com

Quadrel Labeling Systems,
440-602-4700. www.quadrel.com

Redhead Design, +44-1273-60-2440.
www.redheaddesign.com

USDA-AMS | National Organic Program (NOP), 202-720-3252.

www.ams.usda.gov/NOP

Videojet Technologies Inc., 800-843-3610.

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