



**Caro Nut Improves Product Quality
and Increases Yield with
VERYX[®] BioPrint[®] Hyperspectral Sorter**

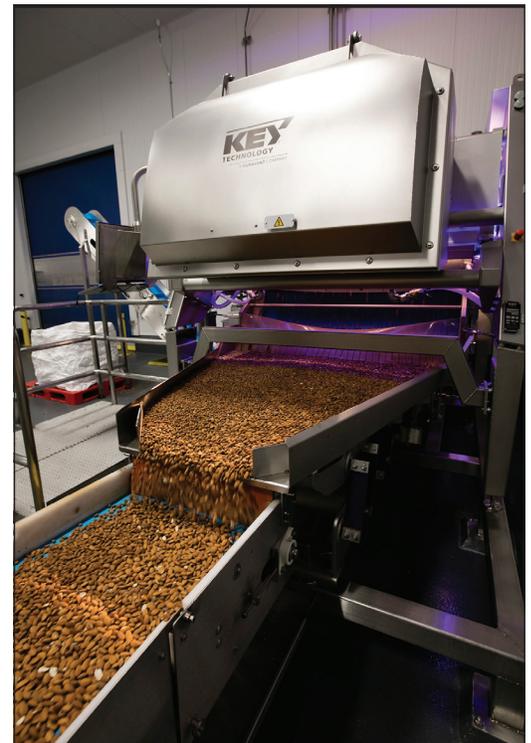
Caro Nut Company is a premier producer of snacking nuts, nut butters and ingredients for major brands, private label customers and industrial food processors. Their commitment to food safety, which drives their success, led them to Key Technology. For their nut butter line, Caro Nut selected Key's new VERYX® BioPrint® sorter. As the world's only sorter that combines hyperspectral detection signals with color camera signals at the image pixel level, this new technology removes more shells, more foreign material (FM) and more product defects, all while increasing yield.

"With VERYX BioPrint, we get the high quality product we need and we've reduced our operating costs at the same time," said Gerard Lorenzani, Plant Manager at Caro Nut. "Before we replaced our old sorter, we had to sacrifice a lot of good nut meat in order to get the shells out. It took a lot of time and effort to re-sort the rejects and recover yield. All that changed with our new sorter. VERYX BioPrint removes exactly what we want and nothing more. It's phenomenal. This powerful technology has improved our product quality at the same time it's increased our yield by more than one metric ton of product a day."

Combining hyperspectral imaging with color cameras, VERYX BioPrint inspects across a broad range of wavelengths within the near infrared (NIR) spectrum as well as visible light to analyze a richer data set about the materials it's sorting. Data from the hyperspectral sensors and color cameras is fused at the pixel level using Key's Pixel Fusion™ technology, producing a unique 'signature' for each material substance to detect the chemometric and biologic properties of objects. This versatile nut sorter finds and removes the widest variety of FM and even hard-to-detect defects like nuts with insect damage, rot and mold without false rejects, regardless of incoming defect loads, while also shape sorting and color grading.

"Detecting shells is difficult for traditional laser/camera sorters because, when shells are the same color as good nut meat, it can trick the sensors. VERYX BioPrint uses hyperspectral technology to look at the moisture content of objects. It sees low moisture in shells and kicks them out," explained Sonny Chhina, Maintenance Supervisor at Caro Nut. "This sorter is so effective, we've eliminated manual inspection on the line and moved that person to elsewhere in our plant."

"We're able to handle heavier loads of incoming shells and defects with this hyperspectral sorter," added Chhina. "We start by selecting the product recipe from the sorter's memory. If the incoming load is very heavy, we may need to adjust the sensitivity of the settings a little, but that's easy to do with just a couple of taps on the touchscreen. Then we're good to go."





Caro Nut's VERYX BioPrint C140 features front- and rear-mounted hyperspectral sensors and high resolution color cameras. It can sort up to 8 metric tons of cashews, almonds, macadamia nuts and other nuts per hour.

"We've connected our VERYX BioPrint to our plant network, which is a great asset for us. If we reach out to Key for support, they're able to jump on and work with the sorter remotely to help us maintain peak performance," noted Chhina. "We're tapping into VERYX's data collection capability as well. For example, our sorter is programmed to measure the attributes of the incoming product and its reject stream. We use that information to be sure we're ejecting exactly what we want to remove. We also give that data to our source managers so they can negotiate supplier payments based on incoming product quality."

"To be clear, this is about much more than a new machine. Key is our strategic partner – we share the same objectives and they're committed to our success. They help us produce the safest, best quality products while reducing our costs," concluded Lorenzano. "We appreciate their focus on elevating standards of performance and leading the industry with new technology development. Bottom line: Key gives us new capabilities that improve our operations."

Published by:

Key Technology, Inc.
150 Avery Street
Walla Walla, WA 99362

☎ 509.529.2161
✉ product.info@key.net
www.key.net