

## X-Rays Rid Raisins of Refuse



### **A raisin processor uses x-ray technology to keep its products free of contaminants.**

Located in the Central San Joaquin Valley, Calif., *Chooljian Brothers* Packing Company is one of the oldest raisin processors in the country. The sweet sun-dried fruit is sold domestically and worldwide via private label packaging or as a bulk ingredient for food manufacturers, retail distributors and candy and cereal producers.

Harvesting, cleaning and packing raisins in bags and pouches is a daily activity at Chooljian. The variety of raisins being handled weigh anywhere from one-half ounce to bulk cases that weigh more than 30 pounds. The packing plant features custom-designed stainless steel cleaning, washing, sizing and blending lines that are some of the most sophisticated in the industry.

The raisins go through laser sorters and more cleaning stations, washing points and quality assurance checks than most other raising processing facilities in California, where the majority of the world's raisins are harvested from dried grapes. Despite all the sterilization activity, Chooljian Brothers takes even greater steps to ensure that contaminants don't go to market with its products.

### **Detecting Foreign Objects in Harvested Raisins**

Chooljian Brothers processes 10,000 tons of raisins annually, with the majority

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harvested from the company's own grape vineyards in the fertile San Joaquin Valley, according to owner Michael Chooljian.

"The grapes are grown until they reach a certain sugar maturity, usually somewhere around late August and early September," says Chooljian. "The grapes are handpicked, set on trays on the ground and left to dry under the sun for about two weeks. The raisins are then delivered to our packing house where they are inspected by the USDA, then put into storage for later processing."

"Since the raisins are lying on the ground, they are exposed to all sorts of contaminants, such as stones, glass, metal fragments, plastic, calcified bone fragments... even shotgun shells," Chooljian says. "After the raisins are harvested, they are processed in our packing plant, go through numerous cleaning processes and then through metal detectors to remove any metal," he explains.

"Even though the USDA has staff on-site, it is not their responsibility to inspect for metal contamination; that's our responsibility," Chooljian says. "The metal detector does help eliminate a lot of the foreign objects, but it cannot detect everything 100 percent of the time. We wanted to add another layer of safety before the raisins are delivered to our customers."

### **Using X-Ray technology to ensure product purity**

Chooljian made a rather cutting-edge move in the fall of 2008 by teaming its metal detector with an Eriez® E-Z Tec® X-Ray inspection system. Chooljian became one of the first raisin-packing facilities in the country to utilize x-ray technology to meet the rigorous standards it sets for contaminant detection.

"We run 60,000 to 100,000 pounds of raisins a day through the Eriez X-Ray system. It can detect minute foreign objects when the raisins are running two inches in depth along the conveyor line," Chooljian says. "Some objects below one millimeter are probably non-detectable by other systems, but Eriez' X-Ray system can penetrate the product and see some particles that lasers and scanning machines do not detect."

The conveyor line is built with a 'timed gate' mechanism that automatically opens for .08 seconds, allowing about 6 inches of product to be rejected after the X-Ray system detects a foreign object, according to Chooljian. "The timed gate interrupts the product flow, grabs the product that has contamination and rejects it in less than one second," he says.

### **How the E-Z Tec System Works**

The Eriez E-Z Tec X-Ray inspection system can inspect virtually any discrete packaged item, continuous bulk product flow or pipe line application. The system identifies contaminants, scans for missing or broken products, detects packing voids, confirms fill levels and controls product and package mass.

Product inspection is achieved through a computer-controlled family of low energy generators and a high performance computer image analysis system. This makes E-Z Tec superior at detecting small statistical variations in the product that signal

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contamination or deviation from accepted specifications.

The E-Z Tec image processing software provides immediate analysis, detection and rejection automatically. The system logs the date, time and type of reject. It also saves an inspection image of the product so product inspectors can view the contaminant.

The size of foreign object detected depends on the selected x-ray model, beam energy, product characteristics, contaminant type (i.e. bone, glass, metal, stone, etc.) and the package material. The Eriez E-Z Tec X-Ray system uses very low and safe levels of x-ray energy. Emissions are virtually undetectable, so operators do not need to wear radiation monitoring equipment.

### Added Safety Checkpoint in Raisin Processing

"Food safety is becoming increasingly important to us and our customers," Chooljian says. "The Eriez X-Ray system gives us another checkpoint in providing a layer of safety that cannot be satisfied with just metal detection."

"We try to be a leading edge supplier when it comes to technology. Therefore, we're probably a little ahead of the curve," Chooljian observes. "As a food processor, we need to protect our food supply. We installed the Eriez X-Ray system to provide a better and safer product for our customers."

*For more information, please call (888) 300-ERIEZ (3743), visit [www.eriez.com](http://www.eriez.com) [1] or send an email to [eriez@eriez.com](mailto:eriez@eriez.com) [2].*

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