

Success story

BEST sorting solutions boost output; cut accidental reject of nut kernels at Australia's Stahmann Farms

Sophisticated laser sorting from BEST increases pecan and macadamia output by 30% while a novel rear ejection system (RES) significantly lowers false rejects to less than 0,25%. The sorter's ability to quickly and easily accept variable sorting parameters, along with its remote diagnostic capabilities, produces a cleaner end-product with greater confidence that exceeds customer expectations.

'Trawalla', an Aboriginal word for 'flood waters', is the name of Stahmann Farm's 700 hectare flagship property in Moree New South Wales, Australia. The farm is the company's main source of pecan kernel in Australia. Trawalla's deep, rich alluvial soil produce some of the finest pecans in the world. The company also sources macadamia and walnut nut in shell from Australia's leading growers from north Queensland to Tasmania.

The Moree farmland, established in 1969, is part of Stahmann's strategy to be Australia's leading Tree Nut Company. The nuts harvested here in June each year find their way into gourmet products the world over with strong markets in North America as well as Europe and Japan.

But first, the harvested nuts are shipped to nearby Queensland and the city of Toowoomba where 80 full time employees at a huge plant handle all cracking and processing on three sorting lines, each line working three shifts 48 weeks a year. These days less than 50% of the nuts arriving at the plant come from Trawalla, with the balance purchased from growers Australia wide. In addition to sorting and processing, the Toowoomba plant packages and distributes product for global customers as well as supplying all the major national supermarket chains under its All Australian 'Riverside' brand as well as the premium "Ducks" brand and private label packaging.

According to Ross Burling, General Manager of Processing at Toowoomba, kernel quality can vary widely depending on post harvest handling, weather, picking damage and other criteria. "We have lab specialists with over 25 years' experience looking for kernel defects, insect damage and grading of the different kernel types. They give us a very accurate and consistent assessment of each shipment."

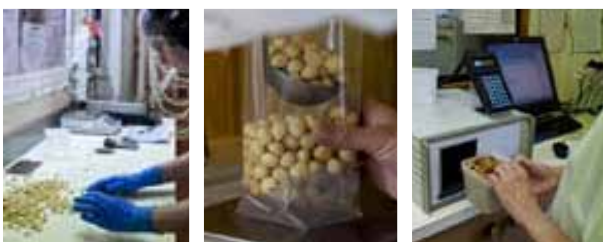


It's from these assessments that parameters are determined for proper, large-batch sorting of raw product. This step is critical since it forms the basis of Stahmann Farm's 'Sales and Processing Alliance', or SPA, a contract with the grower that sets the overall value of the kernel provided. "The more sound kernel we recover from the nut, the more the grower is compensated and the greater the value to Stahmann," Ross Burling says.

"With the Helius, our confidence in producing a clean, high-quality end product is increased. We see payback on this unit in about two years."

Ross Burling, General Manager, Processing Stahmann Farms – Toowoomba Plant

"This drives the need for highly sophisticated sorting equipment that can be easily configured to accurately process each run based on parameters set by lab analysis," he says. "This philosophy is what makes us different from other processors."



Kernel analysis guides the science of sorting

A representative sample of all incoming shipments is first sent to the plant's laboratory for a 'hand crack assessment', or analysis of individual kernels.

An older automatic sorting system at Toowoomba was not as reliable, flexible or operator-friendly for this important step. "It created big production delays because the sorter took so much time to correctly program," he adds. "Despite these efforts, the result typically was the accidental and unacceptable rejection of too much good product with the bad."

But Ross Burling says this experience helped guide him and his team in evaluating newer systems that could more easily meet the plant's needs for higher accuracy.

A major reduction in 'false reject'

The team first saw a demonstration of BEST's Helius free-fall laser sorter three years ago. With up to 12 individual laser signals, the equipment is able to analyze structure, size and shape of the kernels in a single pass, and within milliseconds, uses its sensitive air guns to precisely eject any defect while allowing good product to continue its natural free fall.

"Having instant access to technical support is great peace of mind, and sets BEST apart from other companies."

*Ross Burling, General Manager, Processing
Stahmann Farms – Toowoomba Plant*

The stable laser sorting system has the big advantage that it is also able to inspect the nuts and take out immature kernels. Because the ejection system is at the rear, air valves can be placed extremely close to the product which facilitates highly targeted defect ejection while minimizing removal of adjacent good product.



"Our firm differentiates itself by heavily focusing on reducing accidental rejects to increase profitable yield," Ross Burling says. "Because we have years of experience accumulating very accurate, proprietary data on what constitutes acceptable product, we can impose rigid sorting specifications to minimize false reject. . We've found the BEST Helius with its RES system the most reliable and easily adaptable technology to reduce our false reject numbers – less than 0.25% acceptable product in the reject material. Our plant's output of high quality product has increased by 30% (900kg/hour average) with grade slippage at or below >1%."

And Ross Burling adds a second sort of that 1% grade slippage typically results in 60% recovery of good product.

Simplicity is everything

In addition, the company credits the easy-to-use Helius operator interface as crucial to its success. "The interface is a quantum improvement," Ross Burling says. "The design engineer that creates software in an R&D lab is not the operator that works with it every day.



A big advantage of the technology is its software is designed on a personal computer (PC) platform so an operator can intuitively perform very complex manipulations. If you can compose e-mail at home, surf the web or use word processing, you can effectively operate this system," he says. This includes entering precise sorting parameters for each batch based on the hand crack assessment and instantly translating them to the processing platform. "Prior to Helius, either myself or one of my specialist operators would spend hours holding up the line actually working on the factory floor programming the sorter. It was difficult to properly adjust it to handle the different specs for each sort," he says. "Now, the operator performs this vital task quickly, which takes me out of the loop entirely. However, if necessary, there's a remote monitor with identical displays in my office that lets me check unit settings or even execute the same processes. It's a great backup system."

Remote access doesn't stop there. Thanks to the system's sophisticated software and graphical interface, BEST service engineers can also access the Helius processing platform remotely using the same interfaces from PCs anywhere in the world.

"The company's PAX remote diagnostic system is available 24 hours daily," Ross Burling adds. "I can logon and talk to BEST's European technical staff anytime. Having instant access to technical support is great peace of mind, and sets BEST apart from other companies that eagerly support the sales but not the post-sales support."

He concludes, "With the Helius, our confidence in producing a clean, high-quality end product is increased. We see payback on this unit in about two years."

Are you interested in more information, or a free demonstration, please contact us directly or visit our website.