

New Mexico-based pecan farming and shelling business Stahmanns Pecans carried out extensive testing of optical sorters to resolve a problem that was affecting its profitability: removal of small 2 mm shell pieces from its pecans. After trusting in Sortex technology, the company has seen a 99% reduction in shells. Furthermore, Stahmanns has also nearly tripled its output and managed to retain its entire staff count while increasing profitability during the current COVID-19 climate.

With a rich history dating as far back as 1932, family-owned Stahmanns Pecans is renowned for being the world's first irrigated pecan farm. The female-owned pecan farming and shelling business harvests premium pecans at its pioneer pecan orchard in Las Cruces, New Mexico. Over 150,000 pecan trees are spread over 3,400 acres of land that produces more than eight million pounds of pecans every year with the help of 130 employees.

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> - Rafael Rovirosa Director of Operations at Stahmanns Pecans

The company shows its strong commitment to sustainability and environmentally-friendly harvesting practices through minimal pesticide usage, continuous experimentation with alternative forms of irrigation to improve its water use efficiency, and reduced transportation emissions thanks to its on-site shelling plant. Processing the pecans on-site also ensures that Stahmanns' pecans remain fresh and can be delivered quickly to grocery stores, re-bagging companies, bakeries, restaurants, and other consumer goods brands across the United States.

"We are all about continuous technological improvement and producing a high-value, high-quality product for our customers," says Rafael Rovirosa, Director of Operations at Stahmanns Pecans.

"We offer an assortment of pecan sizes in both Western Schley and Bradley varieties. All of our pecan nuts are packed full of nutrients including: healthy fats, dietary fiber, protein, iron, and essential B vitamins."





Shell removal

With shared commitments to sustainability, digitalization and food safety, Stahmanns approached Bühler with the intention of resolving its problem with shell removal. "Over the years we have tried out many different color sorters, but our issue has always been removal of the tiny 2 mm x 2 mm pieces of shell. After conducting extensive testing with other brands, the SORTEX A and SORTEX F blew the competition out of the water for us; the speed and precision are unmatched," says Rovirosa.

Stahmanns benefits from Bühler's InGaAs technology which enables detection of defects that are otherwise invisible to the naked eye; this combined with visible color separation allows Stahmanns to remove the maximum amount of foreign material (FM) for the safest, most reliable end product.



"Without Sortex technology we would probably have to resort to selling in-shell pecans only and that would reduce our profits, in turn lowering our market position."



"Before investing in Sortex we would find approximately seven shells per one lb. of pecans, now with Sortex we find around one shell per 30lb. after our first pass, that's an unimaginable improvement which translates to just over a 99% reduction!" notes Rovirosa.

Using Bühler's patented PROfile technology, the SORTEX A and F can detect shells, fragments, shape defects and FM as small as 2 mm in size, which is ideal for Stahmanns' requirements. Three dynamic technologies are combined to facilitate the company's most complex of sorting tasks. Firstly, PROshape is an intelligent detection technology which inspects product based on shape criteria when the defective product is the same color as good product. Secondly, PROsize is an ideal solution to separate undersized and oversized produce, as well as broken produce. And finally, PROcolor maximizes commodity value by defining multiple grades of quality product. This adds greater value to Stahmanns pecans by setting higher limits of quality.

"Less shell has undoubtedly resulted in an increase in our food quality and safety. Right now there will be one shell in every six boxes, previously we were averaging two shells per box.

"Without Sortex technology we would probably have to resort to selling in-shell pecans only and that would reduce our profits, in turn lowering our market position," adds Rovirosa.



Increased throughput

Not only has Sortex technology greatly improved Stahmanns shell removal in its pecan processing operations, but it has also resulted in an increase in throughput for the company. The adjustable chute of the SORTEX F can be easily configured for a high throughput for better yields, as well as multiple re-sorting which significantly minimizes the loss of good products for Stahmanns while providing the company with greater flexibility and control.

Rovirosa says, "Processing 3,700 metric tons of pecans used to take us an entire year. Now with Sortex technology we are able to process 11,000 metric tons in that same 12-month time frame. For Stahmanns, the SORTEX F is truly unmatched for throughput."



Covid climate

During the current COVID-19 climate, redundancies and business closures have not been unusual. However, Rovirosa states, "We've been able to keep our business running thanks to our investment in Bühler's technologies.

"We've managed to retain our staff count while increasing profitability, that's a very lucky and rare position to be in at the moment."

"In order to operate our SORTEX A and F machines, we require a minimal number of staff and everyone is spread out. This complies with current social distancing guidelines, so none of our operations have needed to change. We've managed to retain our staff count while increasing profitability, that's a very lucky and rare position to be in at the moment.

"Moving forwards we will be focusing our attention on buying in more pecans and expanding our export markets to include Europe."



