



Customer Testimonial: FrankenGeNuss, Germany

Hazelnut processor increases sorting capacity eight-fold in one-tenth of the time

Photo Credit: Markus Müller, Saskia Spieker, Kamrul Hossain

The yield of a hazelnut tree increases as it ages, reaching its peak output at around 12 years old. German hazelnut processor FrankenGeNuss expects its highest yields in the next few years. Now with its first ever optical sorting machine, the company is well prepared for that day. Whilst it previously took an entire day to process 100 kg of hazelnuts, with the help of Bühler's BioVision™ technology, the processor is now able to sort 800 kg in just 2.5 hours. Additionally, the company has seen its biggest issue of shell contamination resolved.

Established in 2013, FrankenGeNuss GmbH & Co.KG is a family-owned hazelnut plant managed by Martin Stiegler. With a total of six employees, the plant is located in Gonnersdorf near Cadolzburg in Franconia, Germany and boasts nine hectares of land with over 1,000 hazelnut trees, serving as a popular local tourist attraction. Approximately 40–50 tons of hazelnuts are cleaned, dried, cracked, separated and processed by the company every year. Its farm shop and online shop offer a wide variety of products including palm oil-free nougat spreads, roasted hazelnuts, hazelnut salt and hazelnut oil.



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As well as its strong emphasis on quality, FrankenGeNuss is committed to sustainability and environmentally-friendly practices. In 2017, the company stopped using chemical crop protection and insecticides. A flock of 1,600 chickens roam the processor's hazelnut fields consuming hazelnut-laced feed which in turn positively affects the quality of their eggs. These eggs are then sold by FrankenGeNuss to local restaurants and used in pasta production.

BioVision™ technology is a specialist detection system from Bühler that offers simultaneous color, shell and foreign material (FM) detection for nut processors, in just one platform. Featuring a unique configuration of detection technologies which includes BioCam™ combined with either high definition InGaAsHD, PROfile technology, color cameras, or all three, SORTEX BioVision™ acts as a defence against harmful color defects and FM at all stages of the nut processing line.

Resolving issues

Stiegler says, “Before investing in an optical sorter, we sorted all of our hazelnuts by hand. Thus, the definition of ‘good’ and ‘bad’ product becomes subjective with each person sorting the hazelnuts slightly differently. Particularly in the case of shell removal, we wanted to be able to deliver a uniform and consistent quality of hazelnuts to uphold the high quality standards that reflect our brand.”

FrankenGeNuss conducted trials with various solutions providers. Over a period of four weeks, the processor worked with Bühler to assess the performance of the SORTEX E1C sorter with BioVision™ technology on its processing line. In October 2020, FrankenGeNuss invested in the sorter.

“With Bühler, we discovered our shared commitments towards quality and sustainability. As a small company, we were initially unsure if they would have a solution suited to our needs, but the BioVision™ technology was the perfect remedy to our shell removal problem in particular. Also, in terms of improving efficiency and resorting reject, the early signs are good and we can already say that the investment in Sortex will more than pay off!” says Stiegler.



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Shell removal

“When we solely handpicked shell from our hazelnuts, during the roasting process we’d detect around 5–10 pieces of shell in a 50 kg bag of hazelnuts. Since installing our Sortex optical sorter, we’ve asked our hand pickers to check a 50 kg bag of hazelnuts that has been freshly sorted by the Sortex machine and we are happy to confirm that we have not found a single shell. In 400 kg, approximately 1–3 pieces of shell will now be found,” Stiegler states.

Since investing in Sortex, the company’s handpicking workers have been reassigned across various other processing steps. With a more even distribution of manpower, the process of achieving the end product is now reached much quicker than before. “Our workday is much better organized now which allows us to reach maximum levels of productivity,” Stiegler adds.

Higher efficiency and resorting reject

Before investing in Sortex, the company was sorting 100 kg of hazelnuts in a day with the help of two to three hand pickers. "Today we are able to sort 800 kg in 2.5 hours with just one person to set up the sorter and put the product into the machine, as we don't have a conveying system. That's an outstanding improvement in efficiency for us," says Stiegler.

Like many hazelnut processors, FrankenGeNuss also cracks its hazelnuts in-house. During this process, depending on the calibration, processors can often find that their nuts break into pieces or halves. These broken pieces are typically pre-sorted with air pressure but because they weigh the same as the undesired fragments of shell it makes it difficult to differentiate between them. As a result, the hazelnut pieces are at risk of mistakenly being discarded.

"With the Sortex optical sorter and its simultaneous resort functionality, we have the opportunity to resort our reject again without losing any valuable nuts in the process. This also allows us to adhere to food safety standards and get the most out of our hazelnuts for maximum profits," adds Stiegler.

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–Martin Stiegler,
Manager, FrankenGeNuss



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Full potential

The yield of a hazelnut tree increases as it ages, reaching its peak output at around 12 years old: FrankenGeNuss expects its highest yields in the next few years. "Once our hazelnut trees reach their 12th birthday, we expect to be processing over 60–80 tons per year. That is when we will be able to run higher capacities through the Sortex sorter and see its true potential," notes Stiegler.

Regarding the company's relationship with Bühler, Stiegler concludes: "We believe in Bühler's complete solution for hazelnut processing so they will forever remain a close ally as we continue to expand our business and product portfolio."

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