

The evolution of early size sampling

During the 2022 US apple harvest, premier fruit packer Monson Fruit scanned 43 apple trucks on a single day, at a single receiving site with Hectre's early fruit sizing AI app, Spectre Top Down.

Even more impressive, from those 43 trucks, the technology detected and sized more than 103,000 apples straight off the truck and delivered that early sizing data to Monson's QC team, even before the bins were offloaded.

The Spectre Top Down app is the fifth early fruit sizing solution released by NZ based agtech company Hectre. The first was Spectre for Apples. Launched in 2020 it remains popular with medium-large growers and packers due to its simplicity and mobility.

Users take a photo on an iPad and Spectre detects and sizes more than 100 pieces of fruit from the top layer of the bin, serving up a size distribution graph within seconds.

The technology

Kylie Hall, market development manager at Hectre says computer vision AI early fruit sizing technology delivers size data at the earliest possible time in the post-harvest process.

"Previously, traditional approaches saw QC staff manually sizing fruit with callipers. Despite best efforts, due to the labour-intensive nature of the work, only small samples were achieved making the data unreliable.

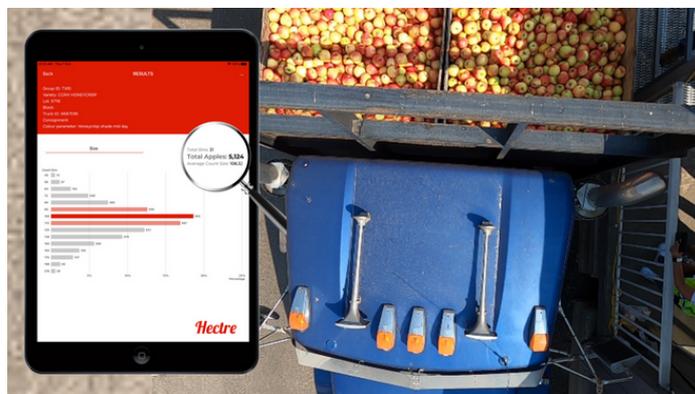
"Unlike humans, this type of AI technology can detect and size massive volumes of fruit, fast," she said.

Post-harvest process fit

Whilst multi-million dollar grader machines provide valuable data at pack time, Ms Hall said this type of tech brings the data to decision makers well before the pack, enabling improved decisions around sales, fruit storage, pack scheduling, freight bookings and more.



Mid size growers and packers can use the Spectre hand-held for fast size sampling



The Hectre app uses AI to size fruit from above.

Gilbert Plath from Washington Fruit & Produce says they use Spectre for Apples (the iPad option) in the orchard to help with the communication chain from the field, to the warehouse, and to sales.

Field staff take photos in the orchard, Spectre detects and sizes the fruit and the size results are shared with their sales and packhouse teams, delivering large volumes of early fruit sizing data as soon as the fruit is picked.

Spectre Top Down was in use at seven Washington receiving sites during the US apple harvest, including fruit leader, Sage Fruit. **Nicole Gordy**, director of business analytics at Sage Fruit says the tech is delivering a massive increase in their size and colour sampling where reliable data is crucial.

"With Hectre's Spectre Top Down app, we can capture size data on more than 5,000 apples from just one truck pass as it pulls into receiving."

Jaritt Hays at Monson Fruit notes multiple benefits. "With the big sample sizes we're getting, we can identify when it's the right time to hit the market for that fruit and gain the highest return. We can reduce expensive pack line stoppages too and provide our sales teams with better projections."

First Fresh NZ are using Spectre for Citrus and a selection of leading Australian and NZ cherry producers are using Spectre for Cherries during this year's cherry harvest. A pear model is now in development.

The Australian application

Ms Hall said traditional manual early size sampling processes often produce unreliable data. "Computer vision technology can help growers and packers transform their early size sampling processes. The key advantage is a much larger reliable size sample, with no touch on the fruit, and access to the data in real time.

"Being able to adjust the pick as it's happening with good data, saves unnecessary packline stoppages. Technology ready for the taking," she said.