



New grape packaging machine a major breakthrough in best agricultural practices

Always at the cutting-edge of technological developments to assist producers with ever-more efficient and cost-saving procedures, Capespan has developed an automatic grape-packaging machine in association with Vizier Systems.

Piet Geldenhuys, Capespan general manager technical (grapes), announced the second experimental phase of the Vizier Grape Sizer at the Normandie farm of Gerhard de Kock. "The main purpose of the machine is to sort the grapes by colour, berry size and accurate carton or punnet mass, as well as providing statistics on productivity."

"With this machine, grape producers are in a position to improve productivity by utilising their labour differently. Instead of the numerous people sorting the grapes by colour, berry size and mass, half can join the harvesters and the other half can be employed in the field to prepare grapes in situ while harvesting, rather than in the packhouse. That means faster harvesting and doing two jobs at once. Furthermore, the machine can be programmed to deliver the product at rates suitable to each packer."

Geldenhuys said that in a world of food safety and best agricultural practices, the grape sizer was a major breakthrough in minimising human handling of table grapes. "Grapes are one of the most sensitive fruits and the less the product is handled, the better."

In addition, grape exporters have to reduce costs, particularly labour costs, to remain competitive in a price-sensitive market world-wide. That's the biggest benefit offered by the Vizier Grape Sizer."

The machine offers significant benefits to grape producers, according to Vizier director Bernard van Zyl:

- In the best case scenario, savings of about 100 g per carton, implying an extra 6 667 cartons, or R333 000 (for a production of 300 000 cartons per season and R50 per carton).
- Increased punnet packing of an estimated 16 pallets per day.
- A reduction in the handling of bunches, obviating the need for scale persons and grading checkers.
- Higher productivity gained with the cut, sorting, weighing and packing process.
- Improved uniformity of classification. When done by people, berry size, colour and weight are measures that will vary due to stress, tiredness and other influences. These factors don't influence a machine, thus delivering consistency.
- Another advantage following from measurement consistency is that one can take from bordering classes to optimise volume in a high value class.
- Uniformity per class will result in a more favourable presentation of the packed product in the market.

Van Zyl pointed out that it was possible to integrate a tracing system into the machine to track a packed product back to its vineyard block. "This

traceability requirement is becoming an important issue to end users.

"When the traceability function is implemented, a further electronic addition will allow monitoring of throughput and both packer and cutter productivity.

"The sizer system already has the capability to determine cartons produced per sorted class. If the function is used to register the delivered grapes per batch, production reports giving costs and yield per variety or block can be produced - vital information for management on the performance per block.

"Another comfortable feature of the sizer is that it can be controlled from an HP iPAQ hand-held computer within a 50 m radius."

Geldenhuys emphasised that grape farming has become a high-tech business. "Increasing profit boils down to improving packhouse productivity. We'd like to see producers using the available labour where it's most needed - that is in the vineyard to both harvest and prepare the bunches. This will result in higher volumes being harvested and in turn the packhouse would be less cluttered - making it easier to manage. The received grapes need only to be packed onto the sizer, which will deliver the bunches in the appropriate class and weight groups to the packers for packing."

He said the ability of the sizer to change packing types, adapt carton weights, trim berry size classification and adjust colour bands of classes would prove to be a major operational advantage. "Packing different pack types simultaneously will simplify the allocation of resources and optimise throughput."

The first prototype of the Vizier Grape Sizer was built in 2003. Van Zyl said, "With guidance from Capespan, we refined the first machine tested on the Summerdown farm of Pieu Bezuidenhout in Upington. With this second development machine at Normandie, we're now moving to the final phase and would like to see at least two systems installed commercially by October this year."

Vizier Systems, originally part of Altech, has been involved in fruit packaging and sorting systems for ten years.

For enquiries about the grape sizer, contact Piet Geldenhuys on 021 9172770.

CAPTIONS

1. Bernard van Zyl oversees the loading of bunches on the in-feed section.
2. Checking the fully loaded cups on the in-feed section en route to the cameras.
3. The camera captures images of the bunches, as shown on the computer screen.
4. Measurement of berry size and colour are explained.
5. The bunches are weighed when the images are captured.
6. Ellipses are fitted to visible berry boundaries to enable accurate calculation of berry dimensions.
7. Releasing a bunch on the scallop belt.
8. Distribution section: bunches to packing belts.
9. Packing correct weight (bunch, group) in a carton.
10. Operational statistics are continually updated on the management PC screen.

