Innovation in fruit-growing technology

Darwin SmaArt

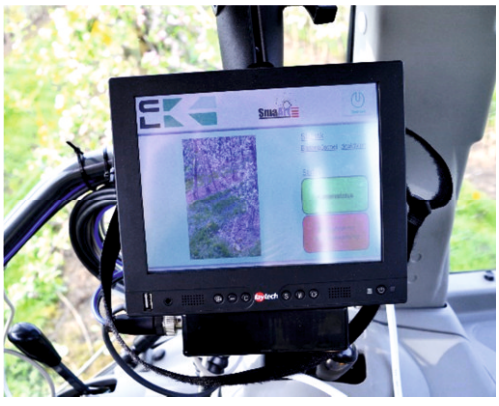
Automated tree-specific blossom thinning

- The greatest challenge in mechanical blossom thinning is to determine the strength of the thinning and the optimum setting of the spindle speed.
- Darwin SmaArt's goal was to replace the subjective assessment of the flowering strength with the eye by means of objective detection with a camera. We have even gone a step further, with this system the spindle speed is calculated individual for each tree.
- The camera in front of the spindle detects the flowering density of the tree and transmits this data in real time to the on-board computer.
- A specially developed thinning- algorithm calculates the optimum spindle speed and passes it on to the electronic control unit of the thinning unit.

Camera and GPS receiver

The special camera captures the flowering density of each individual tree and relays the data in real time to the on-board computer.

In addition, the system can be combined with a GPS receiver to capture the location of each tree.



On-board computer

The high-performance on-board computer calculates the corresponding spindle speed from the data of the camera via a specially developed thinning-algorithm.

In the database in the on-board computer, the bloom density and the calculated spindle speed are then stored for each tree. The data can be retrieved from there at any time.

Thinning unit

The thinning unit consists of a spindle on which six rows of string bars are arranged. The string bars are made of a special flexible plastic.

Through the rotation the strings enter into the tree and thereby remove arbitrarily blossoms. The intensity of the thinning is controlled by the rpm of the spindle.

All existing Darwin machines can be retrofitted with the SmaArt system.

Fruit Tec
Adolf Betz
Schießstattweg 11
D-88677 Markdorf
Tel.: +49(0)7544 96 594-0
Fax: +49(0)7544 96 594-99
info@fruit-tec.com
www.fruit-tec.com

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