

Test and validation

2025WP3_Aure_003

Status: Completed



Technical functionality

Problem Owner:
Aurea Imaging

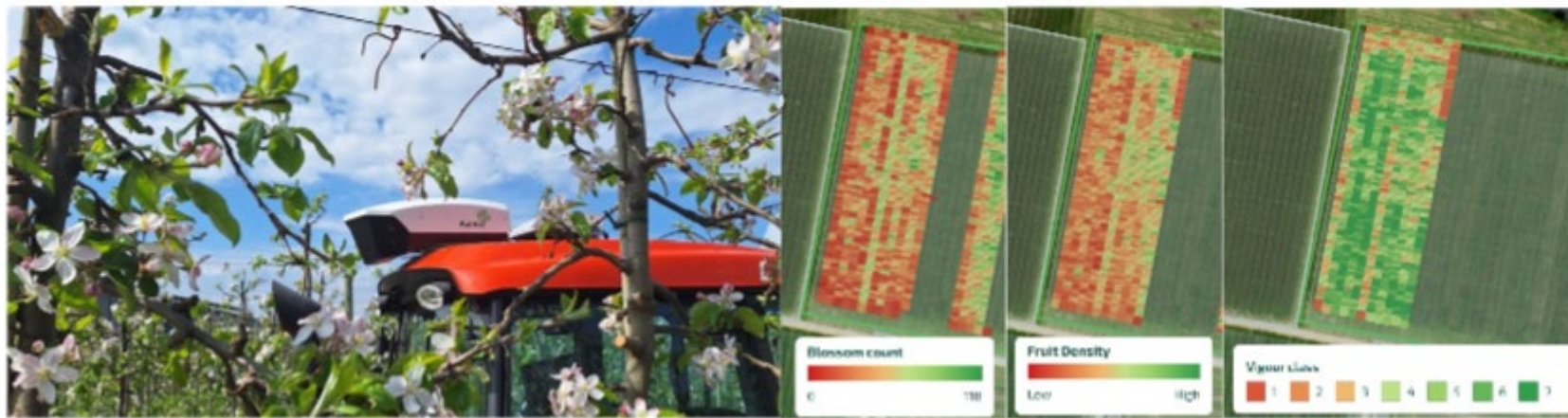
Involved:
Wageningen Research
Aurea Imaging
Delphy
One Planet Research Center
Kubota
Agromanager
FRC Randwijk
2 praktijklocaties

Open Field
Cultivation



Evaluation Report – Camera System Validation

Technical testing and validation of the Treescout camera system in orchards in 2025.



Broad knowledge question

Reliable sensor methods are needed for efficient and sustainable fruit production in the Netherlands. How accurate are precision sensor methods, such as Treescout, in measuring differences in blossom density, fruit load and tree vigour in orchards?

Approach

1. Observations and validation tests were carried out at three locations: FRC Randwijk and two field sites.
2. The Treescout cameras mounted on a tractor collected data on blossom density, fruit load and tree vigour. These data were compared with manual counts.
3. At FRC Randwijk, several recording moments on different days and at different times of day were compared.

Objective

The objective is to validate the accuracy of the Treescout camera system for measuring blossom density, fruit load and tree vigour under practical conditions.

Results and reflection

The results show that Aurea Imaging's Treescout camera system is capable of classifying approximately 80% of the trees in the correct category for precision thinning. Accuracy ranged from 72% to 90%, depending on the intervention threshold. The robustness of measurements at different times of day requires further attention. For precision root pruning, the tree vigour map also resulted in the correct decision for 80% of the trees (tested only at FRC Randwijk). Fruit load could only be estimated in relative terms (more or fewer fruits per tree), with an R^2 ranging from 0.2 to 0.6. There is still room for improvement here.

The report can be found at: <https://doi.org/10.18174/720181>

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Colofon

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