Model to improve fruit transport

Thijs Defraeye, a professor in the Food Quality and Design group, wants to develop a 'self-care food system' to increase the uniformity of decisions made during transport and storage.

Various people decide whether a batch is OK or not during the chilled transport of fruit and vegetables. They do this based on their own experience or using data from a random sample. That leads to a lot of variation in the decisions taken in the supply chain. Thijs Defraeye wants to develop models that let everyone take those decisions using the same approach, with less reliance on individual expertise. At the end of last year, he was made professor by special appointment of Data and Simulations for Self-care Post-harvest Fresh-food Supply Chains in the Food Quality and Design group.

The model can predict the overall picture based on limited data

Defraeye is developing a self-care food system so that everyone in the supply chain can take decisions using the same information. The idea is that the system will be able to predict the overall picture (for example, the quality of the whole cargo) based on limited data (for example, one temperature sensor). To do this, the model uses simulations of the physics to derive additional characteristics of the cargo. 'That lets you take more intelligent decisions,' says the professor.

Strawberries

Defraeye and his colleagues already developed models last year to predict the quality of citrus fruits and strawberries during transport and recommend actions for players in the supply chain based on those predictions. The strawberry model showed that shelf life is determined by the design of the trays, in addition to temperature and humidity. The researchers were then able to identify critical factors for the loss of quality in each type of packaging. SS