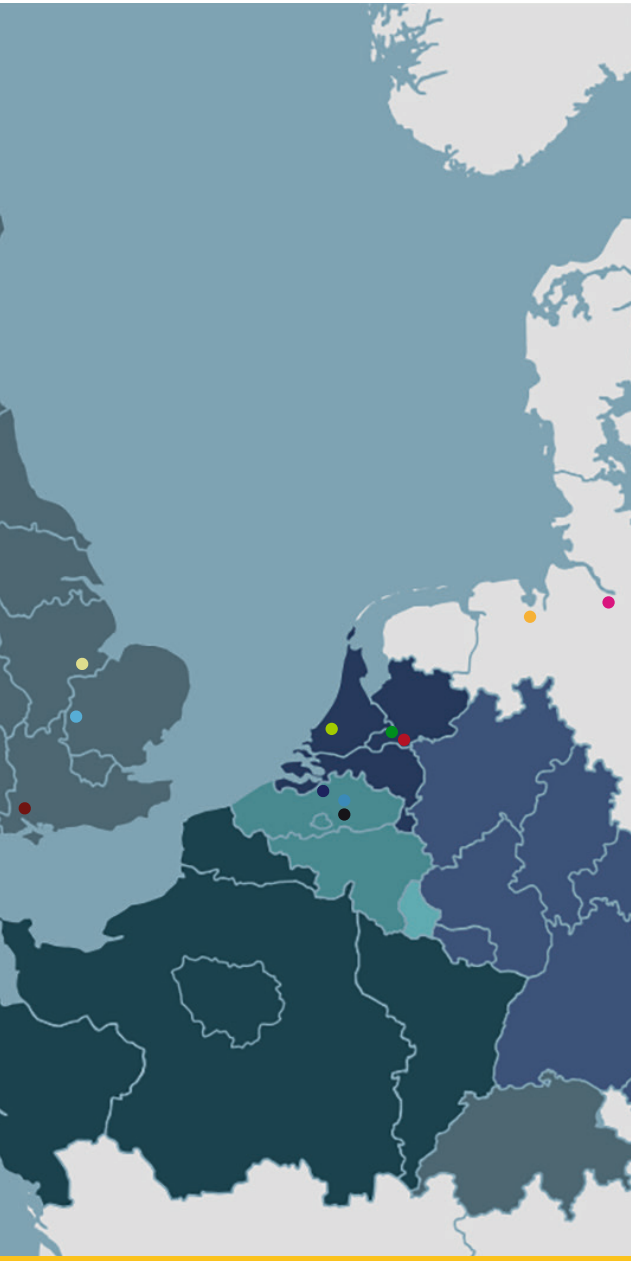
Project area



Consortium partners

- Cranfield University
- STOREX
- VCBT
- NKT Photonics
- SensorSense
- Landwirtschaftskammer Niedersachsen
- Radboud University

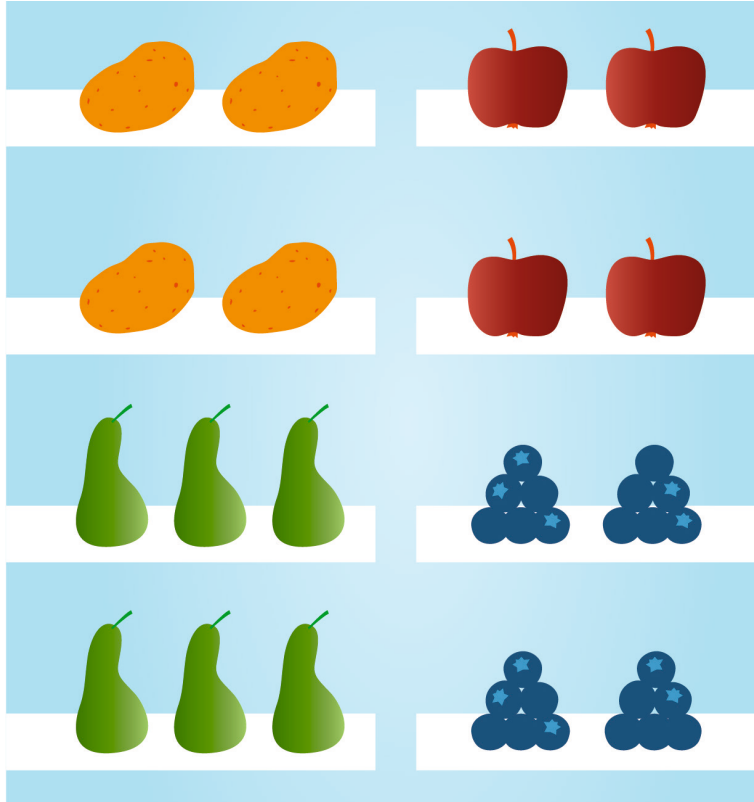
Associated partners

- ESTEBURG Obstbauzentrum Jork
- Wageningen University & Research
- Produce World Growing Trust
- VBT
- Fresh Produce Centre

Interreg North-West Europe

QCAP

European Regional Development Fund



Real-time interactive storage quality control in fresh agro products

A significant part of the fruit and vegetable production gets lost during the post-harvest process. Therefore, various innovation stakeholders from the North-Western part of Europe are now joining forces to develop an affordable tool that could help far-mers monitor the ripening process of their products in real-time. The new tool will contain a next-generation gas detector, which can measure eight different gasses released during fermentation, ripening, damage and rotting. The project strives towards completing a prototype in 2019.

Frans Harren, project coordinator:

"In QCAP, cooperation between knowledge institutions, high tech companies, and farmer organisations is essential. The biggest challenge is probably the communication between all the partners. How do you design your part of the system in a way that it can be used by the other parties? And how do we stick to our time frame? Every six months we discuss this with all partners and stakeholders involved. If we succeed, we will deliver the first accurate, affordable, and easy-to-use monitoring system for the agro-food sector."

Project goals

Low-cost sensor prototype

The project aims for a gas sensor that is able to detect eight chemical compounds simultaneously. Therefore, a new laser is required, with a broad spectrum and a very high intensity. Moreover, the light pathway and the detection method will be optimised. The goal is to make a very selective, but also an affordable detector system.

Selection optimal storage conditions

Which gases are produced by which products? And how do they represent the product quality? This is essential information to be able to convert the sensor data into useful information about the quality of the products. The project will map the gas release in potatoes, apples, blueberries, and pears during multiple degradation processes.

System integration and validation

In the end, the sensor will be connected to a computer-controlled monitoring system, producing easy-to-use information about the fruit quality. The farmers will receive notifications describing the quality as excellent, good or less good. On the basis of this information, they can decide whether they need to sell the product or adjust the storage atmosphere. The QCAP project will develop this complete monitoring system and will test it in real-life storage systems.

Project details

EU funding | € 1.89 m

Total budget | € 3.14 m

Timeline | 2016-2019

Countries | NL, BE, DE, UK

Project coordinator

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