

Monitoring the orchards, plant by plant



It could become possible, thanks to an innovative system currently under development

The intuition is brilliant. To develop the agricultural equivalent of an industrial Supervisory Control And Data Acquisition (SCADA), thus leading to a real paradigm shift in the monitoring of an orchard, regardless of its type. In other words: currently, to check the health status of plants within a large block of land, the field is usually subdivided into sectors.

For each sector, representative plants are selected to be monitored and it is then assumed that the health status of all the plants in that specific sector is homogeneous and represented by those selected plants. Consequently, also the agronomic intervention is homogeneous within the considered sector.

In the future, it would be possible, instead, to perform an individual evaluation, row by row, even tree by tree, through innovative technologies and methodologies deriving from the world of robotics, sensor networks, remote sensing, big-data and controls.

Agronomists and farmers would benefit from this higher level of definition, that might enable the activation of targeted actions to be applied even on a single plant.

A database could eventually be generated with the equivalent of an identity card for each tree, containing precise and historical information. The main players in agriculture are interested in this type

of technology, simply because they will be able to boost production quality, while minimising the environmental impact.

This is the objective of “Pantheon”, a European H2020 project on precision agriculture, coordinated by the Department of Engineering of the University RomaTre, involving three more Universities (Université Libre de Bruxelles, Universität Trier and Tuscia University), together with two industrial partners (Sigma Consulting and Ferrero). After two years of activities, the Pantheon project is now halfway through: the robotic and IoT prototypes have been developed and then, during the second year of work, the first data collection activities on the field have been completed, over a large ha-

zelnut orchard in the area of Viterbo. During the next two years, additional monitoring studies will be carried out to further refine the quality of the system. Professor Andrea Gasparri, coordinator of Pantheon, explains: “The focus is on working towards a prototype, which represents the first step on the way to a pioneering tool for the management of large-scale orchards. In summary, the Pantheon project aims to evaluate whether the technology is ready to develop a complex system for precision agriculture. Of course, further steps will be necessary to transfer our research results into a commercial product, after the conclusion of this project”. For further information please refer to the following link www.project-pantheon.eu. ■



THE TEAM