LOCATION

Serbia, Montenegro, Georgia and Slovenia

PARTNERS

DNET Labs

SRCM - FRUŠKA GORA

AGRIFOOD

UDG

Plantaže

InData

Fede
Connected to agriculture

tracelabs

5.1

Disease prediction and supply chain transparency for orchards/vineyards

CHALLENGE

Pest and disease appearance as well as their spread is one of the main problems in fruit and grape production. Disease control is usually based on experience instead of hard facts, although prediction models are available. However, these models often provide only general instructions instead of precise advice for each user. Additionally, there is a lack of easily accessible traceability data for consumers who would like to know which pesticides and other products their food has been treated with.

AIM

This pilot focuses on complete farm management in vineyards and orchards, providing pest and disease management tools to optimise pesticide usage and increase crop quality. Furthermore, pesticide usage data is collected and stored to enable a transparent supply chain.

HOW

The DNET agroNET platform is used to provide decision support in pest and disease management to farmers, as well as collecting data through the whole supply chain and providing the relevant information to each stakeholder. agroNET gathers information about pesticide usage from Pulverizadores Fede cloud-connected smart sprayers, thus being able to provide the data to be incorporated into the product passport.

IoT devices are deployed and information from Pulverizadores Fede sprayers is integrated to collect knowledge about the environment, spraying cycles, and data directly from field and machines. Throughout the pilot, data are collected, processed and insights generated, providing instructions for farmers in real-time. A blockchain-based data exchange protocol (OriginTrail) is used to ensure trust and transparency between actors and the integrity of the data exchanged in the value chain. The service provides pest and disease control in orchards and vineyards in different regions by using digitised prediction models and cloud connected sprayers.

BENEFIT

The pilot will result in pesticide usage optimisation, leading to a decrease in costs and an increase in the quality of the various fruits and grapes. It will also deliver a trustworthy supply chain based on collected information from all stakeholders.