

The first season of the pilot project for smart viticulture with remote monitoring of pests in Brda is coming to an end

Dobrovo, 22nd September – The pilot project for remote monitoring of pests in vineyards with Trapview service is transitioning to its final stage. In the framework of the project, which, this season, included Klet Brda, the Municipality of Brda, Telekom Slovenije, and EFOS, 24 traps were placed in the selected area of Brda to remotely monitor European grapevine moth (*Lobesia botrana*) and vine moth (*Eupoecilia ambiguella*). The region of Brda has once again offered a great example of collaboration between winegrowers, as 400 winegrowing families of the Klet Brda cooperative and winegrowers outside of Klet Brda have joined forces to work on this project.

What is Trapview and what does it offer to winegrowers?

Trapview is a service that implements a physical network of pest traps, equipped with sensors for temperature and relative humidity. With the help of advanced electronics, the service allows us to collect data on the number of daily catches, temperature, and relative humidity, giving us the basis for analysing the presence of pests at the monitored location. By using data processed with artificial intelligence and machine learning, users can receive information about when and where pests will be present and to what extent. This information is delivered to them through daily generated automated reports, which they can view from an online platform or a mobile application, or through customised reports sent to their emails. Through the platform, the users can also receive weather forecasts for a particular area.



Avtomatske vabe

Obdelava podatkov s pomočjo umetne inteligence

Aplikacije, obvestila

Trapview is an innovative tool that offers timely and accurate predictions on development of harmful insects. It allows us to optimise measures for monitoring and protecting plants based on data collected by automated pest traps. Processed with the help of artificial intelligence, the collected data offers the most accurate information on pest population to date. Users receive accurate and timely information on the pest population development dynamics and the development phases of pests. Based on this information, users can make better decisions in scheduling plant protection measures and can optimise the efficiency of plant protection products. This results in higher and consistent quality of crops, increase of profitability, and more sustainable implementation of activity. Trapview enables comprehensive traceability of captured and processed data and allows user-friendly reporting in case of individual subsidy schemes.

24 Trapview traps installed in two seasons

Between March 2021, when the pilot project started, and September 2022, when it is coming to an end, a network of Trapview traps was established in the region of Brda to monitor and predict development phases of economically significant grapevine pests. In the first stage of the project, 6 automated traps were installed at selected locations, followed by additional 12 traps for European grapevine moth (*Lobesia botrana*) in 2022. Furthermore, 6 traps were added to the network of the pilot

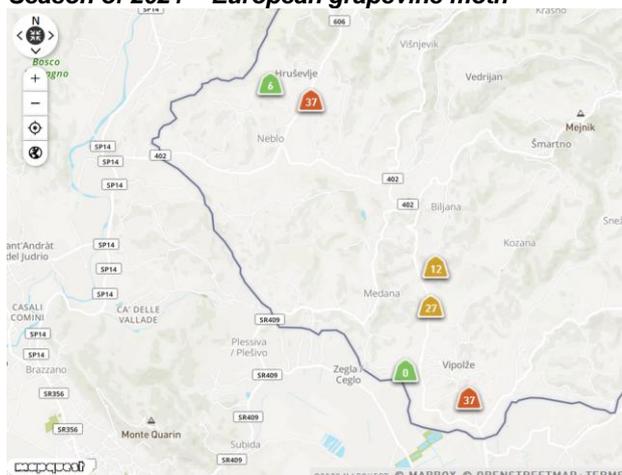
project for remote monitoring of vine moth (*Eupoecilia ambiguella*). In 2022, the total number of traps used to implement Trapview service for all selected winegrowers was 24.

Data highlights the importance of regular monitoring of pests on micro location

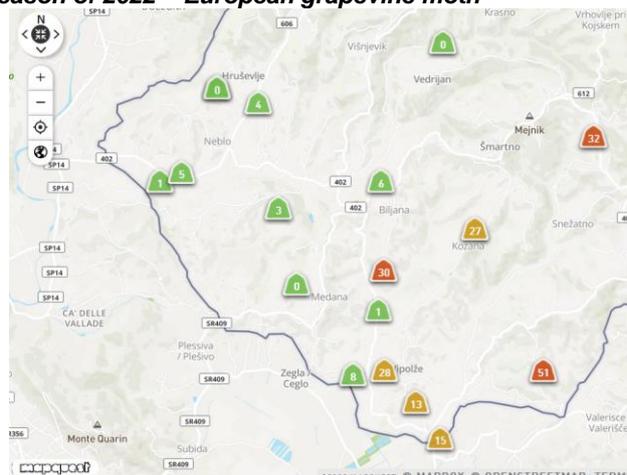
Comparative analysis of caught pests during the seasons of 2021 and 2022 shows how important monitoring pests on micro location is. Data on catches at individual locations indicate that some vineyards are severely plagued with vine moth and require stronger protective measures. At the same time, data suggests that there are areas where this insect is barely or not at all present. By monitoring the data from the same location during two seasons, we learned that the presence of pests in individual vineyards can change from season to season. Furthermore, the analysis of data during the 2022 season shows that the dynamic of catches within an individual generation at an individual location can change.

By analysing data from both seasons, we observed that the quality of the data that winegrowers need to manage their vineyards in a high quality and cost-efficient manner depends on the density of devices in the area we wish to monitor. Optimal treatment with plant protection products results in higher crop quality and optimal production costs in the timeframe of one season. Furthermore, optimal use of protective products leads to a sustainable production and reduces negative environmental impacts.

Season of 2021 – European grapevine moth



Season of 2022 – European grapevine moth



Matej Štefančič, CEO of EFOS: “Recently, agriculture has undergone great changes – both because of climate change and consumers’ demand for healthy and more sustainably produced food. *In the light of this, we need to adjust and upgrade our methods for determining the actual situation on the ground and identifying the potential dangers that pests pose to our crops. The Trapview network in the region of Brda is an important step to achieving that, as it gives as a daily insight into the population of vine moths on the entire area and at the same time provides agricultural advisers with important information that allows winegrowers to implement optimal protective measures for their grapes.*”

Striving to increase the number of traps in the next season

Considering the positive impact that the pilot project for smart viticulture with remote monitoring of pests has had in Brda, we aim to increase the density of traps over the entire Brda area in the next season. In doing so, every winegrower could gain a digital insight into their vineyard. Based on accurate data and with the help of the Chamber of Agriculture and Forestry’s advisory service, winegrowers could make better decisions in implementing optimal measures in their vineyards. Since Trapview also monitors pest in other crops, we wish to extend remote monitoring of pests to olive trees, peach trees, and cherry trees, which are so widely spread in Brda.

This pilot project also highlighted the wider aspect of implementing new technologies of precision agriculture, as introducing digitalisation into viticulture brings more opportunities for successful continuation of the long winegrowing tradition. Agriculture entails a constant generational renewal; whereby younger generations have excellent digital literacy and know how to use the benefits of modern tools. On the other hand, farmers are facing challenges, such as shortage of labour force, increase in production costs, increasing demands for high quality crops with no pesticide residues, and climate change. This is where digitalisation in agriculture can be of much help.

Matjaž Prinčič, young farmer: *“The automated Trapview network definitely has a role in developing precision agriculture and digitalisation. With the mobile application, we can accurately determine the concentration of pests at our location and assess the need for extermination. Each treatment we can skip contributes to environmental protection and reduction in production costs.”*

Silvan Peršolja, CEO of Klet Brda: *“New technologies in the field of digitalisation and precision agriculture are a welcome tool for a nature friendly approach to production of grapes and wine, even though this is a traditional and a couple thousand years old activity.”*

Trapview is protected by European patent

Due to its uniqueness, Trapview is protected by European patent. In terms of sustainable production of food, the French ministry of agriculture has in 2022 granted Trapview the CEPP certificate. Practical application required to receive this certificate was proven with a demonstration test, performed by an accredited laboratory Eurofins, which showed that the use of Trapview in an apple protection test resulted in 40% less sprayings. Comparison was performed against conventional monitoring of pests and decision making on treatment of pests, whereby equal quality of crops was achieved.

Nowadays, Trapview is used on all continents to monitor over 50 different species of pests.

Increasing number of Slovenian municipalities use smart solutions in different fields

Solutions developed at Telekom Slovenije for smart environments can be adjusted to the needs of every local community and according to intended use. The best part of this is that modern technological solutions can lead to concrete steps – in cities, they can be used to reduce emissions, improve energy efficiency, ensure smart traffic and parking management, and provide smart lighting. All this within a reliable network and with safe storage of data in the cloud of Telekom Slovenije.

Samo Turk, Director of Business Development at Telekom Slovenije: *“Technological development offers numerous opportunities for individuals, organisations, and communities. With the development of the Internet of Things, especially, we can create solutions intended for comprehensive management of infrastructure, services, and processes in different environments. This facilitates the use of services, makes services more accessible, and improves quality of living.”*

In doing so, solutions are adapted to specific needs, e.g. energy, transport, logistics, construction, health sector, protection and rescue, municipalities, utilities, public services, and of course viticulture, which was the field they worked on with the partners.

“At first glance, the solution seems very simple, because for the user it really is. However, it relies on a complex technology, where all processes need to run smoothly, in real time, and in a manner that provides useful information. The point of digitalisation is to achieve what we need in a simple, quick, and reliable manner. Therefore, it is no surprise that an increasing number of Slovenian municipalities are implementing smart solutions in different fields and that municipalities choose to support local projects like the pilot project for digitalisation of viticulture at Klet Brda, which was supported by the municipality of Brda,“ concluded Samo Turk.



Klet Brda: Neja Ožbot, Marketing and PR, neja.ozbot@klet-brda.si
EFOS: Boštjan Božič, Operational Director, bostjan.bozic@trapview.com
Telekom Slovenije: Katarina Prešeren, Corporate Communication: pr@telekom.si