

FFoQSI
Austrian Competence Centre for
Feed and Food Quality, Safety
and Innovation

Programme: COMET – Competence
Centers for Excellent Technologies

Programme line: COMET-Centre (K1)

Type of project: Smart Pole,
1/1/2021 – 12/31/2022, Company
Project (multi-firm)



© W&ORTD-Redl: Leova Smart Pole weather station

SMART POLE: DIGITAL MEASUREMENT IN THE VINEYARD

HOW SMART LEAF SENSORS IMPROVE FUNGAL FORECASTING IN VITICULTURE AND REDUCE PESTICIDE USE.

Weather stations form the basis of forecasting models for predicting pests and diseases in viticulture. However, the data collection of the 100 to 300 ha measuring radii often leads to erroneous forecasts. This is because in the foliage zone - the place where infections predominate in viticulture - humidity occurs later and lasts longer due to leaf protection. The microclimate in the foliage wall can thus not be correctly recorded by the free-standing weather stations.

The **smart poles** can detect these small-regional differences. The depth L sensors are installed at microregional and topographically different locations - if possible, in relation to existing weather stations. They provide differentiated weather data, which is used to improve the algorithms in the existing Vitimeteo forecasting model. In addition, the wineries can view the collected data via an app.

SUCCESS STORY

Impact and effects

The information collected via smart poles using intelligent leaf sensors provides even more detailed information on the actual development of diseases, so that **targeted crop protection measures can be taken and pesticides can be saved**. A particular scientific focus is on the influence of the leaf moisture sensor on the **warning prediction of the plant diseases Oidium (powdery mildew) and Peronospora (downy mildew)**, which are of particular economic importance due to their considerable damaging effect.



© W&ORTD-Redl: Peronospora (downy mildew)

Project coordination (Story)

Ing. Mag. Franz Rosner
Lead Researcher
W&R RTD

T +43 (0) 2243 37910254
franz.rosner@weinobst.at

FFoQSI GmbH

Technopark 1D
3430 Tulln
T +43 (0) 2272 22700 – 0

office@ffoqsi.at

www.ffaosi.at

Project partners

- VOESTALPINE, AT (C. Maxera)
- W&O RTD, AT (F. Rosner)
- BOKU, AT (S. Steinkellner)
- GEOsens GmbH, DE (R. Krause)

This success story was provided by FFoQSI GmbH and by the mentioned project partners for the purpose of being published on the FFG website. FFoQSI is a COMET Centre within the COMET – Competence Centers for Excellent Technologies Programme and funded by BMK, BMDW and the Austrian provinces of Lower Austria, Upper Austria and Vienna. The COMET Programme is managed by FFG. Further information on COMET: www.ffg.at/comet