



# RUSTWATCH



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## EXECUTIVE SUMMARY

RustWatch will continuously upload EIP-Agri abstracts. The first two abstracts are titled: “IPM strategies for wheat rust control in six case study regions in Europe” and “Stakeholder driven tools and services for wheat rust early warning”. The approach for the RustWatch EIP-Agri Abstracts will include the use of links to our website, so that results and recommendations constantly can be updated and relevant throughout the project. This means that responsible partners should update the spaces on our website with relevant information. New menu items that needs updating is now available. The abstracts are available at the EIP-AGRI Website (<https://ec.europa.eu/eip/agriculture/en>)

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## Background

The EIP abstracts must include a short summary for practitioners in English on the (final or expected) outcomes (1000-1500 characters, word count – no spaces).

This summary should at least contain the following information:

- Main results/outcomes of the activity (expected or final)
- The main practical recommendation(s): what would be the main added value/benefit/opportunities to the end-user if the generated knowledge is implemented?
- How can the practitioner make use of the results

This summary should be as interesting as possible for farmers/end-users, using a direct and easy understandable language and pointing out entrepreneurial elements, which are particularly relevant for practitioners (e.g. related to cost, productivity etc). Research oriented aspects which do not help the understanding of the practice itself should be avoided.

The approach for the RustWatch EIP-Agri Abstracts will be an intensive use of links to our website so that results and recommendations constantly can be updated throughout the project. This means that responsible partners should update the spaces on our website with relevant information for different target audiences. New menu items that need updating are now available.

## Abstract 1.

### IPM strategies for wheat rust control in six case study regions in Europe

IPM strategies that combine cultivar resistance, the use of low fungicide input combined with control thresholds and alternative chemistry as reliable control measures were tested in six case study regions (CSR) in Spain, Italy, Germany, Switzerland, UK and Denmark. Results from these trials are disseminated via our [IPM Trials section](#) on the website. Differences and similarities in IPM strategies were discussed at CSR workshops in 2019 and 2020. All material in local language is available via our [Case study regions section](#) on our website. February to May 2020, a new crowdsource smartphone app was used in the case study regions for [disease surveillance campaigns](#) in early spring 2020; especially aiming at reporting which varieties were affected by wheat rust disease and which were not. All regions effectively uploaded data to a common Dashboard (more than 450 observations). The most affected (and not affected) varieties were identified and farmers and advisors were timely informed about the needs for control actions. In collaboration with the breeding network, 214 most grown cultivars were identified and exposed via [Field nurseries](#) to regional growing conditions and regional pathogen races in the six case study regions. Results from 2019 showed that more than 90% of the tested varieties were resistant to Yellow rust, 47% to Leaf rust but only 5% to Stem rust.

## Abstract 2.

### Stakeholder driven tools and services for wheat rust early warning

Several new web based tools and services were developed during the first two years of the RustWatch project. A new [crowdsource smartphone app](#) was used in the case study regions in 2020 for disease surveillance. In 2021, the use of the App will be expanded to regions and partners beyond the RustWatch consortium, - to discuss the potential, reliability and sustainability of such tools for wheat rust early warning. A similar SmartPhone App was developed for use during sampling of wheat rust isolates to be diagnosed and characterised in the lab. The type of rust as genotype (DNA profile) are immediately available on [maps and charts](#). The maps and charts are available in [5 different languages](#) and they can be embedded into any web based regional Agricultural Knowledge and Information Systems aiming at analyzing the results in a regional IPM context. RustWatch established a fruitful collaboration with the official variety testing (VCU) in Europe, and a Trap nursery data management system – managed by VCU themselves – collect [disease scorings](#) on six differential cultivars and susceptible reference cultivars for Yellow rust, Leaf rust and Stem rust. VCU partners also sample isolates and the results as genotyping and race phenotyping improve the VCU wheat testing and evaluation of new wheat cultivars. A similar system was developed for managing all data from [Field nurseries](#), aiming at testing more than 200 of the most grown cultivars in Europe in six Case Study Regions. The Trap nursery and Field nursery activities and associated tools and services facilitate the best options for farmer's choice of cultivars and minimize the risk of severe epidemics in Europe. The experiences so far indicate that these tools and services motivate sharing of data, harmonization of methodologies, facilitating more robust conclusions and effective awareness raising regarding wheat rusts development in Europe.