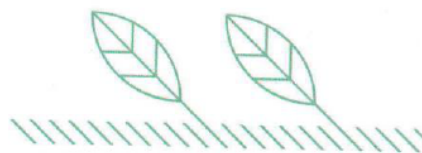




Symposium

**AGROBIODIVERSITY
ALONG THE VALUE CHAIN**

December 4th - December 6th 2023



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Dear participant,

It is our great pleasure to welcome you to Ghent (Belgium) on the occasion of the 1st international CROPDIVA symposium 'Agrobiodiversity along the value chain' (4th to 6th of December 2023). This international symposium aims to stimulate knowledge exchange and interactions between researchers and stakeholders interested in agrobiodiversity. The symposium covers a wide range of topics, organised in the following scientific sessions:

- Genetics: How they shape agrobiodiversity?
- The impact of cropping systems on agrobiodiversity
- Food and feed technology, drivers of change on agrobiodiversity
- Agrobiodiversity: the challenges and opportunities for socio-economic sciences

We are very pleased to welcome Prof Johan Six (ETH-Zürich), Prof Andreas Börner (IPK-Gatersleben) and Prof Carl Lachat (Ghent University) as keynote speakers. They will undoubtedly give inspiring lectures on the various aspects of agrobiodiversity.

We hope that this symposium will be a good opportunity to improve agrobiodiversity in the value chain.

We wish you a pleasant stay in Ghent and hope that you will enjoy not only the scientific program, but also the Belgian hospitality and the social activities we will organise.

Prof. Geert Haesaert

Chairman of the symposium and coordinator of the CROPDIVA project

Genetic and phenotypic diversity of triticale in relation to yellow rust resistance

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Triticale (x *Triticosecale* Wittmack), a cross between wheat and rye, has the potential to become a valid alternative to other small cereals and could thus diversify crop rotations and increase biodiversity in agricultural production. As a multi-purpose grain-forage species it has the reputation of performing well on marginal soils, even with reduced nutrient input. Although triticale was considered as a healthy crop compared to e.g., wheat, in recent years disease susceptibility is one of the main issues limiting its introduction into cropping systems. The most urgent targets of triticale breeding are therefore durable resistance against diseases of which yellow (stripe) rust caused by *Puccinia striiformis* f. sp. *tritici* (Pst) is one of the biggest problems given the presence of some very aggressive isolates (e.g., 'Worrior race').

In this study, 280 triticale accessions were grown in an augmented design, during two growing seasons in four different agro-ecological zones. These accessions were evaluated for their resistance to yellow rust, but also other phenotypic characteristics such as soil cover, plant height, flowering time and grain yield were noted. The variation in genetics was mapped using DArT (Diversity Arrays Technology) markers.

The phenotypic screening of the triticale revealed that there is a considerable variation in yellow rust incidence between years, locations and triticale genotypes. In addition, the tolerant genotypes originated from different breeders, which can be an indication of the presence of different sources of resistance within this population. Also, on the genetic level, there was a great variation between the genotypes, which is essential to continuously improve triticale by breeding efforts. In the next phase, a GWAS study will link the genetic data to the phenotypic data to find informative markers for future breeding. The data collection and analyses are currently running. Results will be analyzed, and conclusions drawn.

This study is part of the CROPDIVA project (Horizon 2020, grant agreement NO 101000847).

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