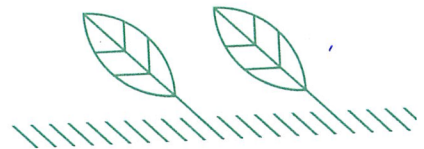




Symposium

**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

Program

Monday 4-12-2023

- 8h30 Registration and Welcome
9h30 Introduction, Prof. Geert Haesaert-Chairman (Ghent University)
9h45 Prof. Johan Six (ETH-Zürich): 'Agrobiodiversity from a global perspective'
10h30 Prof. Carl Lachat (Ghent University): 'Agrobiodiversity in diets'
11h00 Q&A
11h15 Prof. Andreas Börner (IPK-Gatersleben): 'Genebanks, a reservoir for increasing agrobiodiversity'
12h00 Q&A
12h15 Lunch
13h30 Panel discussion with actors along the value chain (farming, breeding, milling, seed cleaning, food technology, food safety)
14h30 Oral session - Agrobiodiversity: the challenges and opportunities for socio-economic sciences
Chair: K. Mattas and J. Schouteten

Oral presentations

Profiling potential consumer markets for neglected and underutilized crops, Simoun L. Bayudan, (Belgium)

Recording consumers' awareness and attitudes towards a more diverse agro-food system, K. Mattas (Greece)

GO CROPDIVA: Optimising agro-ecological adaptation to mitigate global climate change, E.J. Stevens (New Zealand)

Flash talks (about poster)

Constraints to crop diversity in value chains: a case of underutilised crops in Germany, Irina Solovieva (Germany)

Intercropping in Denmark: A food system perspective, Tiffanie F. Stone (Denmark)

Cooperative agricultural products for sustainable local areas, ecosystems and biodiversity, P. Sergaki (Greece)

- 16h00 Coffee break
16h30 Oral session - The impact of cropping systems on agrobiodiversity
Chair: S. Vogelgsang

Oral presentations

Is "regeneration" possible? Determining the drivers of plant diversity in cocoa production systems in West and Central Africa, Calum Maney (The Netherlands)

Weeds, insects, and agricultural biodiversity in intercropping systems, René Gislum (Denmark)

The trade-offs of using annual plant communities as field margins to deliver single or multifunctional ecosystem services in both the UK and Serbia, Todd Jenkins (UK)

Chickpea as a means to expand crop rotation in Flanders, Sophie Waegebaert (Belgium)

Tuesday 5-12-2023

8h30 Oral session - Food and feed technology, drivers of change on agrobiodiversity

Chair: P. Gou and T. Dapčević-Hadnađev

Oral presentations

FT-IR analysis of protein secondary structure of high-moisture extrudates from fava bean, Clara Barnés-Calle (Spain)

Development of LC-MS/MS method to determine vicine and convicine in faba-bean retail food samples, Sylvia Kalli (The Netherlands)

Amino acid and sensory profile of faba bean and lupin based spreads, Jelena Tomić (Serbia)

Evaluating sensory aspects of innovative food dish prototypes and recipes incorporating underutilized ingredients, Marija Ranic (Serbia)

Flash talks (about poster)

Generic framework to assess food safety hazards from changes in the primary production, Sylvia Kallia (The Netherlands)

Optimisation by MRS of oat liquefaction process for subsequent Spray Drying, Marc Piella-Rifà (Spain)

Utilising nutritional characteristics of overlooked plants within agrobiodiversity to address diverse nutrition and food security goals, Marija Ranic (Serbia)

Molecular characterization for the valorisation of minor crops, Davide Emide (Italy)

10h30 Coffee break

10h45 Oral session - The impact of cropping systems on agrobiodiversity

Chair: R. Gislum and G. Verlinden

Oral presentations

Optimisation of faba bean intercropping systems, Jonas Claeys (Belgium)

Feasibility of pulse-oat mixed cropping systems for commercial agricultural production: First conclusions of a two-year, multi-site study in Switzerland, Yannik Schlup (Switzerland)

Mixed intercropping between four lentil and three hull-less barley varieties: Performance under Swiss climatic conditions, Filippo Carmenati (Switzerland)

Enhancing intercropping efficiency in Mediterranean climates, Davide Gulino (Spain)

Legumes and their pivotal role in sustainable agroecosystems, Inge Speeckaert (Belgium)

Use of intercropping with oats and hullless barley to support pea production, Edward Dickin (UK)

13h00 Lunch

14h00 Poster session

Chair: S. Landschoot

Flash talks (about poster)

Effect of type of cropping of oat with protein crops on (anti)-nutritional quality, Nathalie Bernaert, (Belgium)

GOOD-Agroecology for Weeds: a European project for the promotion of agroecological weed management, Wouter Maes (Belgium)

Scaling agroecological processes in mixed crops to the farm level: the CropMix approach, Ana Ernst (The Netherlands)

Attractiveness of different plant species and communities to pollinators, Filip Franeta (Serbia)

Potential of yield differential compensation between pure stands and intercrops of hull-less-barley and oat with pea, Vesna Župunski (Serbia)

The effect of variety and fertilisation on the yield of buckwheat and the presence of pollinators, Greet Verlinden (Belgium)

Winter legume-cereal intercropping: a sustainable way to increase agroecosystem resilience, Riccardo Zustovi (Belgium)

Attracting natural enemies: the use of banker plants in Brussels sprouts, Bram Vanthournout (Belgium)

15h30 Visit + Conference dinner in Bruges

Wednesday 6-12-2023

8h30 Oral session - Genetics: How they shape agrobiodiversity?

Chair: C. Howarth and A. Börner

Oral presentations

Genetic mapping of the powdery mildew resistance gene Pm13 on oat chromosome 1D, Selma Schurack (Germany)

Evaluation of naked (hulless) barley accessions for future breeding of healthy food barley for Europe, Edward Dickin (UK)

Genetic and phenotypic diversity of triticale in relation to yellow rust resistance, Riccardo Zustovi (Belgium)

Healthy Oats- using oat biodiversity in new products with enhanced nutrition, Catherine Howarth (UK)

Flash talks (about poster)

Unveiling the Potential: Agrobiodiversity Enhancement via Intercrop Breeding, Reena Dubey (Belgium)

Characterization of buckwheat (Fagopyrum sp.) collection in Serbia, Vladimir Sikora (Serbia)

Outbreak of yellow rust on triticale in Serbia, Radivoje Jevtić (Serbia)

Performance of 280 triticale cultivars in a two-year field trial in Serbia, Milan Miroslavljević (Serbia)

An inventory of hexaploid oat genes and QTL: Powdery mildew resistance as a use case, Charlene P. Wight (Canada)

Exploitation of genetic diversity of spring hull-less barley in a field trial in Serbia, Ljiljana Brbaklić (Serbia)

10h30 Coffee break + poster session

11h00 Oral session - The impact of cropping systems on agrobiodiversity

Chair: G. Haesaert

Oral presentations

Effects of chloropicrin fumigation and azoxystrobin application on ginger growth and soil phosphorus availability, Yan Wang (The Netherlands)

Faba bean – triticale mixed intercropping, an interesting source of provisioning and regulating services, Sofie Landschoot (Belgium)

Quantifying the mechanisms of weed suppression in cereal-legume intercrops, David Kottelenberg (The Netherlands)

Optipluim – Optimal cultivation of protein crops for poultry feed, Joos Latré (Belgium)

Mixed intercropping of faba bean and triticale: what happens in the soil ? Greet Verlinden (Belgium)

12h30 Closing session

13h00 Lunch

Performance of 280 triticale cultivars in a two-year field trial in Serbia

Milan Miroslavljević¹, Sanja Mikić^{1*}, Radivoje Jevtić¹, Vesna Župunski¹, Svetlana Mirkov Knežević¹, Jovana Timić¹, Matthias Herrmann²

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Triticale (×Triticosecale), based on crosses between wheat (*Triticum aestivum*) and rye (*Secale cereale*), is considered as underutilised crop in Europe being grown on acreages and in quantities much less than dominant crops. However, its potential as silage, food and energy crop, its yield potential, and its tolerance to abiotic and biotic stress, has yet to be fully explored. An experiment established within the CROPDIVA project aimed at introducing triticale in many distinct agricultural regions of Europe. The objective of this study was to evaluate performance of diverse triticale genotypes that would be used to shape resilient agroecosystems better adapted to climate change, with enhanced food diversity and added ecological and economical values. In total, 280 triticale breeding lines or cultivars were chosen from 29 European breeding programmes, to ensure a broad genetic background for the intended genome wide association analysis for relevant traits. The field trial was carried out at the experimental station near Novi Sad, Serbia (N 45°19'21.212", E 19°50'50.341") for two years in an augmented design in 5 m² plots, with 5 checks in 4 replications. After winter performance, plant density and spike length were considerably higher in the second experimental year. Thousand-kernel weight and test weight also varied between the seasons. The heading time occurred later in 2022, but with a shorter heading window than in 2023. These overall performances reflected on lower average grain yield in 2022 (5.4 t/ha) than in 2023 (6.5 t/ha). Higher values for most of the measured traits in 2022-23 could be attributed to the optimal sowing time, compared to much later sowing date in the first year (December 2021). Additionally, weather conditions were more favourable for crop development in the second season, resulting in good germination rate (70% to 95%), good plot density (310 - 630 spikes per m²), good standing ability and homogeneity for most of the genotypes. Four genotypes (Danko34, NORD6_7512, Danko48 and Lumaco) with the fresh yield above 10 t/ha in 2023 and above 6 t/ha in 2022 and with good performance of other agronomic traits could be an interesting material for further exploration.

Acknowledgement:

CROPDIVA - Climate resilient orphan crops for increased diversity in agriculture, the project funded from the European Union's Horizon 2020 research and innovation programme under grant agreement N°101000847. Thanks to DANKO, Nordsaat, JKI, UGENT and BOKU for providing the seeds.

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The CROPDIVA project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°1010000847.