

# FIRST RESULTS (May 2023)

## CROPDIVA



### Important notice:

**The results, especially from the breeding, mixed intercropping and supporting ecosystem services are from first-year experiments and thus should be used with caution.**

**Keep following the project for further updates.**

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### First results on... breeding

The first experiments showed that the yield and quality of facultative oats sown in autumn were higher compared to spring sowing, even in the locations that suffered from (mild) winter damage. This revealed the ability of oats to compensate winter damage via recovering and increased tillering. The oats also showed significant variance in drought tolerance what is promising for future breeding. Additionally, the modern cultivars significantly outperformed the older cultivars which illustrates the breeding progress.

Triticale genotypes were investigated in respect to yellow rust resistance and biomass digestibility and it was made clear that an extensive basis of genotypes is available and thus that selection for these traits is highly possible. While using specific sub-traits to select for digestibility, triticale genotypes were identified delivering both good yields and good quality, which confirms the usability of triticale as a forage crop.

### First results on... mixed intercropping (MIC)

Based on the first year results it was concluded that:

- MIC was promising for some crop combinations like winter pea x winter triticale, buckwheat x faba bean and oats x lentils (depending on the varieties).

- MIC did not significantly affect yield and quality parameters for spring hull-less barley x spring pea and spring oat x spring pea
- MIC of winter faba bean x triticale revealed that protein content of unfertilized triticale is significantly higher when grown in MIC.
- Depending on the location and variety combination, the land equivalent ratio of mixed intercropping of winter faba bean x triticale and oats x lupins exceeded 1 at most of the locations.

### First results on... supporting ecosystem services

From the first-year results from Serbia and the UK it was shown that multifunctional mixes have the potential to provide several ecosystem services, like pollinator support, soil/water protection, without a trade-off in function and agronomic performance.

### First results on... developing new products

In order to develop food and non-food products, existing protocols, for food production must be adapted for the

above-mentioned crops. Protocols for protein isolation and characterization for faba bean, lupin and buckwheat are ready which will be the base for industrial upscaling.

Specific products have already been made like:

- Frankfurt and Mortadella sausages with a partial substitution of pork (50 % substitution of pork protein) by a protein concentrate of faba bean,
- four sweet and six salty flavoured spreads including buckwheat and a functional spread made of faba bean seeds,
- bread made of wheat and wholegrain buckwheat blend in the ratio of 50:50.

### First results on... value chains

The analysis of 21 value chains in 5 countries showed a great diversity in the cultivation and use of underutilised crops. For the development and introduction of new products it is found that cooperation along the chain will be necessary and should include actors who are close to the consumer.

#### About CROPDIVA

CROPDIVA wants to put 6 underused arable crops back in the fields: oats, hull-less barley for human consumption, triticale, buckwheat, faba beans and lupins. 27 European partners are joining forces to enhance agrobiodiversity in Europe. They will achieve this by focusing on crop diversity and creating local value chains. The project is running from September 2021 to August 2025.



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