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## Collective organisation for underutilised cereals processing

## At first glance

In France, underutilised cereals such as rye, rivet wheat, millet (etc) are coming back into the fields and into eaters' plate. This is due to a long participatory research process starting with some projects such as the Underutilised Cereal Renewal one in Western France. Besides underutilised cereals development is providing opportunities for organic farmers to diversify crops and market into short and local food chains.

What can we learn about underutilised cereals and landraces? What has been done in the framework of the Underutilised Cereal Renewal project?

## A lack of diversity in cereal farming

Nowadays, maize (49%), wheat (30%) and rice (19%) are the three main cereals cultivated around the world. In France, wheat occupies more than 50% of the cultivated cereals surfaces, maize around 15% and barley 20%. Because of this three cereal species' supremacy in the fields and on the market, many other species that used to be cultivated before the second world war have been forgotten.

Moreover, the regulatory framework for variety registration doesn't foster genetic diversity within and between species, encouraging the breeding of pure line varieties and hybrids. Indeed, to be marketed, a variety has to be registered following very restrictive criterias (homogeneity, distinctiveness, and stability). On the contrary, landraces are characterised by their diversity and evolutive capacities over time, which have made their registration impossible so far. As a consequence, the cereals available on the market are standardised, and predominantly not adapted to organic farming.

In this context, some groups of organic farmers want to bring diversity back into the fields, by cultivating forgotten cereals landraces which are not available on the market anymore. Indeed, they can't fit the legal breeding criterias, and the know-hows to process and cook them have been lost.

## Characterizing Underutilised Cereals and Landraces

Underutilised cereals belonged to the history and to the local cultures in France. They used to be cultivated before the mecanisation and industrialisation of agriculture. This is the case for einkorn, rivet wheat, spelt... Other crops as millet and sorgho, are still cultivated, processed and cooked in some parts of Asia and Africa.

Buckwheat (polygonacea) is also included in the Underutilised Cereals Renewal project because it is used as a cereal by farmers, and was part of former projects on cereals. Moreover, this plant is part of the brittany identity and history.

A landrace is 'a dynamic population(s) of a cultivated plant that has historical origin, distinct identity, as well as often being genetically diverse, locally adapted and associated with traditional farming systems' (Villa and al, 2005).

## The Underutilised Cereal Revival project

In 2016, a group of farmers, millers, bakers, and researchers in the West part of France (Brittany, Pays-de-La-Loire, Normandie) decided to join in a 3 years project to work on underutilised cereals. The project is coordinated by the organization of Brittany's organic farmers (FRAB), supported by the Cultivated Biodiversity and Participatory Research team (BCRP – French Agronomic Institute), and by Triptolème, a local association of farmers, bakers or millers. This project was partly financed by 'La fondation de France'. The aim is to rediscover biodiversity and forgotten species with landraces crops. The project also enables organic farmers to select, breed and multiply seeds in order to adapt them to their local environmental context and to define tools to process the cereals locally. The overall objective is to allow citizens to eat more diverse food. Moreover, this project takes place as an extension of a participatory research process which started 10 years ago, between three organisations working on landraces. At the beginning of the project, researchers from the INRA asked for landraces accessions to various european genebanks (because no underutilised cereals landraces can be found in the fields anymore). Several varieties of oat, spelt, rivet wheat, rye, millet and buckwheat have been multiplied by local farmers and by the INRA. Then, field observations were managed to describe landraces populations phenotypes. Another part of the project deals with grain processing, as the identification of new outlets is a good way to promote the cultivation of minor cereals for farmers. Different collective initiatives are ongoing to meet this goal (shared materials, grain equipment survey, nutritional and organoleptic analyses).



1. Bouchemaine farm, Angers, 2018.



2. Bouchemain farm, Angers, 2018

## The way forward

The collective work and management of the network and the participatory research are very important to respond to organic farmers' issues. Various meetings with all the actors is a key point to maintain a good dynamic inside the network.

For now the collective dynamic of the network is settled and effective. However, it has to find new ways of getting funds to be financed on the long-term and be really sustainable.

Besides, for now this work has only be done for cereals, but farmers would also like to find adapted landraces of other crops, such as leguminous or oleaginous. The way forward would be to increase the number of species studied.

## Suggested readings

Daurelle, N., Maréchal, G., Leprêtre F-E., Mercier, F. 2018. Multi-actor Research for the Renewal of Minor Cereals in the Western Part of France. Proceedings of the 9th Organic Seed Growers Conference, pp. 16-20.

Oehen, B., Gregorio J. de, Petrusan, J. 2015. Report on the market potential of minor cereals and consumers perceptions about them in different European regions. Healthy Minor Cereals Project (European Commission). [www.healthyminorcereals.eu](http://www.healthyminorcereals.eu).