

Creating dynamic and diverse populations

Mixtures of landraces or old varieties

Problems

Lack of adapted varieties and availability of organic seed as well as decreasing agrobiodiversity, motivated farmers to develop their own dynamic populations with an intra-varietal diversity and higher adaptability. Landraces or old varieties might have lost their intrinsic diversity and have not been selected in the right conditions. Mixing a set of selected ones can offer good opportunities to create new diverse populations and to associate cultivar with complementary characters.

Solutions

The mixture of several populations (landraces, old populations from Genebanks or varieties bred according to organic principles) will evolve together as a dynamic population year after year under certain farm conditions.

Collective organizations offer spaces for technical cooperation and seed exchanges among farmers, while re-creating the necessary specific knowledge. Researchers, processors, consumers can join the process to better reach objectives of the whole food chains.



Figure 1: Dynamic wheat population (Photo: INRAE)

Practical recommendations

- Start a collection of diverse cultivars that fit to organic principles (avoid modern varieties obtained by biotechnology).
- Test and identify cultivars adapted locally; landraces are generally more robust with good nutritional and sensorial qualities; modern varieties could be productive but more fragile. Within a mixture, plants will have unpredictable susceptibility to diseases.
- Create the dynamic population by several cycles of multiplication.
- Selection will be done by the environment and by the farmer applying mass selection (positive or negative) in his own farm conditions.

Further information

This practice abstract has been developed within the Cross-Visit in France in June 2018, and is based on the case of the farm of Vicent Lefevre.

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