

Managing on farm populations

Mixtures of landraces or old varieties

Problems

Mixtures of populations will foster the organic sector, by diversifying available crops, fulfilling their ecological function and stimulating diversity at all levels.

However, beside creation and breeding process of such crops (PA# 4), farmers should manage the economic and technological issues of the seed production. Even if the main aim is to provide adapted cultivars to farmers, in some cases and for some species, seeds can be sold (see new regulation about heterogeneous material), but farmers should take care about health issues, because dynamic population are bred to fit given local contexts and not for large adaptation.

Solutions

The mixture of several populations will evolve together as a dynamic population year after year in the conditions of the farm and will offer locally adapted cultivars to better reach objectives of the whole food chains.

Farmers within local groups (operational groups, seed associations, community seed banks), will explore new market opportunities thinking about introducing the on-farm plant breeding activities in the cost of the products. For health issues, it is better to exchange or to sell small quantities of seeds in order to proceed to a first multiplication before producing on larger scale.



Figure: Farmers are collectively managing threshing and cleaning of seeds (Photo: INRAE)

Practical recommendations

- Selection should be applied by the farmer on farm under the usual practices to strengthen local adaptation. Selection may include: choosing an area representative of the desired conditions and well populated in the field, sorting seeds based on their size if necessary, selecting the most interesting plants or spikes in the field (at least 1000 spikes) to introduce in the next year seed lot.
- Farmers should ensure access to local (collective or individual) technological means for seed preparation (sorting and calibration) and conservation.
- A market for dynamic and heterogeneous populations must be identified (based on cooperation with local organisations/food chains).

Further information

1. PA#4 Creating dynamic and diverse populations
2. [Toolbox for identification and description of organic heterogeneous material](#)

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LIVESEED: Boosting organic seed and plant breeding across Europe. LIVESEED is based on the concept that cultivars adapted to organic systems are key for realising the full potential of organic agriculture in Europe. Research project 2017-2021.

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