

ORGANIC FROM THE START – WHY DOES IT MATTER? BENEFITS AND COSTS OF ORGANIC HETEROGENEOUS MATERIAL IN ORGANIC WHEAT CULTIVATION

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Abstract Text:

The benefits of organic breeding (e.g. contribution to the overall objective of organic farming to conserve and enhance biodiversity, development of locally adapted and resilient cultivars that help to reduce the use of agrochemicals, environmental pollution and greenhouse gas emissions) span the entire food system. However, organic breeding currently plays a niche role in the organic sector and needs to be promoted more strongly. There is an undersupply of organic varieties, which is linked to a lack of awareness among value chain actors, including consumers. The aim of this study was to assess the benefits of organic heterogeneous material (OHM) as a cultivar type promoted by the EU Organic Regulation (2018/848).

We explored the economic, social and environmental benefits and costs of breeding, growing and processing OHM using the Furat tenero Floriddia bread wheat population in Tuscany, Italy, as a case study. Interviews were conducted with stakeholders of short, local value chains of the OHM bread wheat cultivar Furat tenero Floriddia. These stakeholders, including breeders, multipliers, farmers and processors, have been using OHM cultivars for several years and therefore gathered knowledge and experience about its benefits and costs. Additionally, external researchers working with OHM were interviewed. In total, 17 interviews were conducted in 2023 and were analysed through a structured content analysis. The results from the interviews were validated in 2 stakeholder workshops which took place in 2024 hosted by Rete Semi Rurali Italian seeds network. During the stakeholder workshops the interview results were discussed, validated and, where possible, quantified.

The analysis of the interviews and the workshops shows that key benefits and costs of OHM derive from the genetic diversity of these materials. Agronomic benefits of using OHM cultivars as perceived by the participants to the case study include: adaptation to the local growing conditions, high nutrient use efficiency, good weed competition, high disease resistance, and beneficial effect on the soil quality. The participants linked these factors to a better spatial exploitation of plants above and below ground and a to a higher yield stability potential over time. The technical aspects linked to population conservation (e.g. maintaining an appropriate genetic diversity level), seed production and traceability (e.g. preventing seedborne diseases in farm saved seeds), emerged as challenging factors in our study, meaning that OHM handling is a knowledge and responsibility intensive activity for farmers.

The independence from the seed and cereal commodity market, which is considered as an opportunity by the farmers using OHM, requires however local value chains, specifically adapted to the food products based on OHM grain, in order to ensure fair and stable revenues for all the actors involved. More benefits perceived as important for OHM wheat processing, include good baking quality and stability, good nutritional value, as well as distinctively good and unique aroma and taste. On a system level, using populations leads to seed sovereignty because of the absence of IPRs on OHM. On the other hand, the funding of OHM breeding programmes is a challenge. In conclusion, stakeholders and experts working in the Furat tenero Floriddia wheat population value chains in Italy confirmed a great potential of using OHM cultivars in organic farming, especially when grown in marginal areas and when integrated in short and artisanal value chains.