Organic agriculture is growing steadily

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Within the complete spectrum of farming, the organic sector is a well-established and respected sector. Although relatively small in size compared to conventional farming, the area under organic management has shown steady growth throughout the years. Eurostat data demonstrates an increase in area and share of the total agricultural area under organic management.

The common goal in plant breeding: to create diversity and choice in varieties. All farmers have to be able to choose the varieties best suited to their farming conditions, production goals and personal wishes. Whether they cultivate GMO maize, flowers under conventional conditions or organic carrots, growers need a wide palette of varieties to be able to choose the variety that best suits their needs. The plant breeding sector provides diversity to choose from, in varieties of trusted quality.
Most of the professional plant breeding companies are focused on conventional farming. However, several see a growing market in providing high quality seeds to the organic sector. Some companies exclusively produce for the organic market, others produce for conventional as well as organic farming. The development of varieties suited for the organic sector also provides valuable information for the development of varieties for conventional farming. After all, all forms of farming benefit from robust varieties, with a lower need for artificial fertilizers and plant protection products, while remaining on par in quality and quantity of harvests. Testing varieties under organic growing conditions helps plant breeding in general to contribute to the sustainability of all forms of farming.

Supply and demand

Today, an estimated 60-70% of seeds used in organic production in the EU are produced under conventional farming conditions, the only difference with conventional being that they do not receive any chemical treatments before selling. In part, this is due to the farmers' lack of knowledge of availability of organic seeds, but cost difference compared to organically produced seed may play a role as well.

	2012	2013	2014	2015	2016	2017
European Union 28 organic area x 1,000 ha	10,048	10,071	10,315	11,106	11,932	12,560
Percentage organic of total agricultural area	5.64%	5.65%	5.78%	6.20%	6.67%	7.03%

Data source: Eurostat

The European Union is currently investigating the availability of organic seeds.
At the same time, efforts are being made to ensure that Member States have regularly updated databases with quantities of seed for organic farming available in the market. This will help organic farmers find the best suited varieties for their situation. It will also boost demand for seeds originating from seed companies that develop varieties for the organic market and that produce seed under organic conditions.

Heterogeneous material

Farmers already have a lot to choose from in varieties of different types, but more options are on the way. Many professional growers like to use F1 hybrid varieties for their 'hybrid vigour', often leading to strong characteristics such as better disease resistance, uniformity and often a higher yield. Others prefer open pollinated varieties that show some diversity in the field but are still defined as a variety. In some crops, varietal mixtures may be marketed. A new option has been created, as organic production regulation 2018/848 opens the market to heterogeneous material. Heterogeneous material can be described as a population with a high level of genetic diversity, not being a mixture of varieties.
The regulation stipulates that European marketing conditions that apply to varieties do not apply to heterogeneous material. However, there will be specific conditions for marketing in order to ensure only quality seeds reach the market and to ensure there is no possibility of infringement of plant breeders' rights. One of the restrictions that has already been specified in the regulation is that the heterogeneous material will have to be bred and produced under organic conditions.
In the second half of 2019, the Directorate-General Santé will establish the conditions under which heterogeneous materials may be marketed.

Breeding for Organic vs. Organic Plant Breeding

Most professional plant breeding companies develop new varieties under conventional management, i.e. with the use of synthetic fertilizers and chemical crop protection. Plant breeding companies that select cultivars suited to organic farming will then test new varieties for performance under organic management. Certified seeds of the successful varieties are then produced under organic management.
EU Regulation 2018/848 mentions organic plant breeding. This means plant breeding activities where the entire development of new varieties is carried out under organic management, i.e. without the use of synthetic fertilizers and chemical crop protection. There are hardly any commercial plant breeders that develop new varieties under organic management at this time. The suboptimal field conditions create great risks, such as a loss of (promising) varieties and/or seed productions that do not meet set quality standards.
A third option still available to farmers today is the use of non-chemically treated (NCT) seeds produced under conventional conditions. Often, these are varieties that have been developed for the conventional sector. According to EU Regulation 2018/848 this option will no longer be available after 2035. The EU is currently investigating availability of seeds for organic farming in order to see when the derogations for use of NCT-seeds can end without ending organic farming of the crops involved.

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