Organic plant breeding

Financing diversity!

Organic plant breeding secures genetic resources for sustainable organic farming. However, it is still chronically underfunded. High time to change that.

From Ina Hiester

En organic plant grows under comparatively harsher conditions than its conventional . They are neither fertilized with mineral

The plant is neither artificially fed with fertilizer nor defended against diseases and pests with lots of chemicals. There are conventionally bred varieties that be propagated organically and subsequently also produce good yields on organic fields. However, view of climate change, the loss of biodiversity and the deregulation of new genetic engineering, it is important that organic breeding continues. Organic breeders develop seed-resistant, license-free varieties under organic conditions and without genetic engineering. These varieties are adapted to local soil and climatic conditions and good yields without the use of mineral fertilizers and agricultural poisons. Through its achievements, organic breeding thus preserves valuable genetic resources and the diversity of our cultural landscape [1].

The German government has also recognized the importance of organic breeding. In its "Organic Strategy 2030", the promotion of breeding for organic farming is the very first of a total of 30 measures presented, with the help of which the goal of "30 percent organic by 2030" is to be achieved [2, 3]. However, details on financing are lacking - and breeding is costly and time-consuming. According to Michael Fleck, Managing Director of Kultursaat e. V., it takes around seven years from crossing to registration with the Federal Plant Variety Office for annual crops. Breeding biennial crops such as cabbage takes twice as long. Over the years, this results in costs of 350000 to 500000 euros per variety [4].

The crux of donation financing

Conventional breeding is financed primarily through licenses, reproduction fees and seed sales. In comparison, organic breeding has always pursued a more idealistic approach. Fleck says: "We at Kultursaat understand Varieties as cultural assets. Financing through licenses, as often done by seed multinationals, is therefore out of the question for us. Nobody should be excluded from the use and further development of biodiversity." [4] According to Fleck, two thirds of organic breeding in German-speaking countries is financed by donations - for example via the Zukunftsstiftung Landwirtschaft seed fund. In 2024 alone, this fund provided around 1.7 million euros for research and development of organic vegetable, cereal and fruit varieties [5].

For Freya Schäfer from the Research Institute of Organic Agriculture (FiBL), donor funding for organic breeding is both a blessing and a curse: "It's impressive how much money is generated in this way. However, organic breeding is not just a 'nice to have', it is important for the preservation of biodiversity and the economic sustainability of organic farming. That's why it needs a solid business plan." In addition to variety development itself, more training and further education is also needed, emphasizes Herbert Völkle, board member of the umbrella organization for organic plant breeding in Germany. He demands: "We need to professionalize organic breeding, make it more academic and thus the next generation of breeders." Currently, only the University of Kassel in Witzenhausen has its own department for organic plant breeding [6].

There have been and still are several initiatives to generate more money for organic breeding from the private sector. Gebhard Rossmanith, former CEO of Bingenheimer Saatgut AG and also on the board of the umbrella organization for organic plant breeding in Germany, cites an example of the first stage of the value chain: "Five percent of the sales that Bingenheimer Saatgut makes with the varieties developed by Kultursaat flow back into breeding. The company has made a voluntary to this." Trade can also help: As part of the FAIR-BREEDING® project, from 2007 to 2021 some natural food retailers will support free

The Bioverita label on the box of Rodelika carrots identifies seed-resistant plants from organic breeding at all stages of the value chain.

The farmers willingly invest 0.3 percent of their annual fruit and vegetable turnover in biodynamic vegetable breeding [7]. But even that is not enough.

State instead of business as a supporter?

In order to tackle the chronic underfunding of organic breeding systematically, FiBL presented a concept for pool financing in a key issues paper back in 2018 at the request of the German Federation of Organic Food Producers (BÖLW) [8]. The idea was to oblige the entire food retail sector, as the last stage of the value chain, to contribute a fixed percentage of its organic turnover to the financing of organic breeding. In 2020, the BÖLW launched a project to implement the concept. However, after the start of the war in Ukraine, many organic actors were suddenly confronted with economic challenges that required their full attention in the face of inflation. Peter Röhrig, Managing Director of the BÖLW, explains: "The project came at a time when the market was tight. Meanwhile, of course, nothing has changed in terms of the great importance of organic breeding for agriculture as a whole. Overall, we have shifted the focus from the economy to the state. The industry is already doing a great deal to strengthen organic breeding, and with currently only two percent of state funding for organic research, this has not changed.

You can hardly achieve 30 percent organic! We believe that politicians have a duty to change this."

Freya Schäfer from FiBL doubts that this calculation will work out: "The public sector does not finance variety development, variety maintenance or variety registration. It only provides research funds to improve breeding methods or seed handling methods. Although business development programs are possible in the field of organic breeding, breeders usually have to provide 50 percent of the funds themselves." Schäfer is still hoping for pool financing via trade. However, she points out that the trade often has difficulties selling varieties from organic breeding: "Compared to conventional hybrids, organic varieties that are stable in seed - especially in vegetables - often produce a lower marketable yield. they are more suitable for direct marketing and processing. In order to motivate the trade to make a greater financial commitment to organic breeding, breeders need to focus more on the needs of the trade."

Gebhard Rossmanith also believes that the financing of organic breeding urgently needs to be put back on the agenda. He warns: "We are also running out of time politically. Germany still has a green Ministry of Agriculture - but who knows what happen next year? The industry must now send a clear signal that organic breeding is important to it!" The deregulation of new genetic engineering is an additional alarm signal that must not be ignored: "There will be less and less GMO-free material in the foreseeable future. The organic sector must therefore become more with GMO-free varieties. Otherwise we risk losing the trust of consumers." □

▷ The numbers in square brackets refer to links, available at **oekologie-landbau.de/materialien.**

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