



**ORGANIC
PLANT BREEDING**

Conference Report

Seed for future food systems

*November 29th 2018, Brussels
Demeter-International e.V.*



Conference outcomes in a nutshell

Organic plant breeding provides organic farmers with varieties which are adjusted to the low-input production system of organic agriculture. Increased organic plant breeding and cultivation will enhance the availability of regionally adapted varieties, agro-biodiversity, sustainable agriculture and environment protection. There are still European regions without organic breeding initiatives, mostly in the Mediterranean countries, and consequently there is lack of organic varieties suitable for these regions.

While several organic breeding initiatives already work on a professional scale and have found financial support, most still lack financial stability. The present financing of organic breeding by private foundations and donors to a large extent is not sustainable in the long run and must be replaced by other financing instruments. The presented “Crop Plant Per Mil” might be a fair and promising model in this context.

- Increased transparency and data of the organic seed market are needed as well as improved information about national databases for organic varieties and seeds in order to convince suppliers to enter the business.
- The cooperation between an organic breeder (De Beersche Hoeve BV) and a wholesaler in The Netherlands (Odin Holland CV) demonstrates a best practice model how retailers can support organic breeding and contribute to consumer acceptance of new open-pollinated varieties.
- ECO-PB is suggesting to adapt the test protocol for breeders in order not to narrow down the possibilities of organic breeding.
- Consumers should be informed and “trained” to accept organic vegetables of high quality, although these products might have an unconventional look regarding present market conditions.
- The Dottenfelderhof in Germany is a best practice model how biodynamic on-farm breeding interacts with the needs and expectations of the other food chain actors as they are all present on one farm.
- Community owned seed companies as the Seed co-operative in the UK are a promising best practice model for promoting organic breeding and involving actors of the whole food chain.
- Stakeholders welcomed the new regulation on organic seeds as a first step in the right direction, but pointed out, that this is not the final solution for the further development of the organic seed sector.
- MEP Martin Häusling requested an increased share for funding organic breeding by EU research programs.
- From the stakeholder side it was requested to establish a round table to solve questions and problems regarding the definition, registration and marketing of the various types of heterogenous varieties. The Commission could not promise this ad hoc, but is open and interested to intensify the dialogue with the stakeholders.

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This conference was the final public event of the three-year project ‘Promoting Organic Plant Breeding in Europe’ which was initiated by the Demeter-International EU Liaison Office Brussels in 2016 in close cooperation with the IFOAM-EU Group and other important stakeholders. Aiming to promote the development and use of organic varieties on a European scale, the project provided a platform for networking and discussion among organic plant breeders and stakeholders. Moreover, the project explored different perspectives for the organic sector and discussed challenges and ways to overcome obstacles regarding the further development of organic plant breeding.

One main goal of the final conference was to present results and project outcomes via speeches of different project partners. The focus was on best organic breeding practice examples among European initiatives and reporting about strategies, how to finance organic breeding and make it a successful business. Another main conference aim was to provide a discussion forum about policy recommendations, that would enable greater uptake of organic plant breeding and organic varieties.

MEP Maria Heubuch (The Greens/EFA), who hosted this conference together with Demeter-International, pointed out the chances organic plant breeding offers to produce high quality food, increase biodiversity in our fields, increase climate change resilience of farming systems and for establishing small and medium sized enterprises in the seed sector to counterbalance the increasing monopoly of multinationals in the global seed market.

The conference took place in the **Representation of North Rhine-Westphalia at the EU** and was moderated by **Hans Martin Lorenzen**, the long-term experienced agricultural adviser of The Greens/EFA in the European Parliament.

Conference panel 1: Financing and business models for organic plant breeding

Johannes Wirz (Institute for Contextual Science, Goetheanum, Switzerland) reported about his study ‘Seed as commons’, which had shown, that organic plant breeding is subsidised by foundations and private donors to a large extent. Johannes’ work is focused on finding models of shared profit and responsibility among the stakeholders to finance organic plant breeding in the long term, thus reducing the dependency from private foundations. He explained the model “Crop Plant Per Mil” (CPPM). Dependent on seeds and crops, the added value from the breeder to the counter equals a factor of one thousand. CPPM is not a donation, but a fair benefit sharing – and ethically spoken - a responsibility of processors, traders and retailers. The CPPM could be paid at the end of the food chain, i.e. by the retailers, or alternatively, at every point of sale (POS). Thus, all the stakeholders could participate in the CPPM benefit sharing. He explained practical details on how that could be realized. He pointed out that tools of transparency that provide the stakeholders with information on the origin of the produce, the seeds and the breeding organisations - and that would also uncover which produce originate from conventional seeds (derogation) - are essential. He believes that a label which indicates that an organic product comes from organically bred varieties is needed.

Moderator comment: It is important to show people that they have a choice and that they can contribute to financing organic breeding.

Stefan Doeblin (CEO of the organic seed enterprise Sementes Vivas in Portugal) started the project “Organic food from organic seeds”. In his company, it is important to separate organic seed multiplication from organic plant breeding. Currently, the organic plant breeding activities are

financed by participating in different research projects and by private foundations. However, this is not sustainable. Stefan supports the idea to build an organic plant breeding fund and investigate the Community Supported Agriculture (CSA) farm model in the context of organic plant breeding. Other recommendations and ideas are to focus on crops, which are not yet on the agenda of other Southern European activities or organic seed companies; coordination with other organic seed companies to define a joint European country strategy (who is doing what) and organize one meeting per year of the European organic seed companies and plant breeders. Last but not least, consumer education is a key but complex aspect.

Maximilian Herstatt (Vertis Environmental Finance, Belgium) presented his master thesis research about the economics of carrot seeds in organic farming. According to his research organic carrots are the most important vegetable in Germany in terms of sales volume and have become a mainstream product, which is available in almost any supermarket. The data collection of his thesis suggests that about 90% of organic carrots in Germany are sold through supermarkets and that likewise about 90% of organic carrots are grown with NCT (non-chemically treated) seed. There is a market concentration both in the seed market for organic carrots, as well as in organic carrot farming. There are a few major companies (e.g. Bejo, Nunhems/Bayer, Hazera, Rijk Zwaan, Syngenta) selling seeds to organic carrots farmers. The market segment wash/storage is the biggest both in conventional and organic farming, and there are a few market leading varieties like Nerac, Napoli, Bolero, and Rodelika for example. Main economic differences between NCT and organic seed is the cost of production, which is doubled or even tripled for organic seed. The main economic differences between NCT/organic carrot seed and seed from biodynamic cultivars lies in the basic difference of breeding schemes. NCT and organic seed are mainly hybrid varieties, which are said to have higher yields and degrees of uniformity. One of the main advantages of open-pollinated seed from biodynamic cultivars is that the general possibility for the organic farmer to produce own seed is given. Breeding and seed multiplication are very time intensive processes, hence currently there is a large gap in the organic production value chain. This gap can be closed when organic farmers choose to use organic seeds and seeds from organic/biodynamic cultivars and stricter regulations are in place.

Freya Schäfer (FiBL Germany) explained the aims of the LIVESEED Horizon 2020 project, which is to reach 100% of adapted cultivars for organic production in the long term. The organic seed market is non-transparent for all the stakeholders and available knowledge and data insufficient. Market information is needed to compete with big multinationals. LIVESEED is developing business models and financing strategies by investigating different crop groups. Currently it runs a seed suppliers survey to understand the attitude of the suppliers towards seed production and breeding. People are very hesitant to get engaged and they consider organic plant breeding to be a risky business. An important step to increase the transparency is to improve the national databases for organic varieties and seeds. In countries where the organic seed market is small, the trust decreases, and people are not willing to invest.



Photo: (from right to left) Hans Martin Lorenzen, Johannes Wirz, Stefan Doeblin, Freya Schäfer, Maximilian Herstatt

Conference panel 2: The role of farmers, breeders, traders, retailers and consumers in organic breeding

This panel was mainly focusing on the breeder and producer in the food value chain.

René Groenen (De Beersche Hoeve BV, The Netherlands) spoke for “Kultursaat e.V.”. He is specialized in seed propagation and breeding of open-pollinated vegetable varieties. René is cooperating with “Kultursaat e.V.” in Germany, where he is in charge of vegetable mildew tolerance research. In addition, he grows vegetable seeds for the “Bingenheimer Saatgut AG”. Bingenheimer Saatgut is developing an investment fund for those breeders who are doing seed propagation and want to invest in better production facilities. In 2016, he sold his farm to the Odin company (organic wholesaler in The Netherlands). René outlined the reason, why he decided to be a daughter farm of Odin. His work as a breeder is better supported and bred seed varieties will find their way directly into the supply chain and to the consumers as open-pollinated varieties.

Barbara Maria Rudolf is a farmer and breeder located in Northern Germany. In this panel she was speaking on behalf of ECO-PB. Barbara is working on a Bioland farm (110 hectares) growing vegetables on a large scale with marketing via wholesalers and retailers. Barbara reported about the different demands of consumers, traders, producers and breeders. Seen from the perspective of the retailer and consumer the availability of products must always be guaranteed. The outward appearance of the products must be immaculate and the price as low as possible. The farmer has also the ambition to create and grow such demanded products in order to satisfy the consumer, but this is not always in accordance with the given natural conditions. Of course, the customers wishes meet with the ambition of the organic breeders. But the additional demands for the registration process of a variety have proven to be to many. Organic breeders are in the dilemma of breeding for the practical purpose and not for the variety office. ECO-PB is suggesting adapting the test protocol for breeders in order to create an even chance for organic breeding.

Carl Vollenweider works as a biodynamic breeder at “Forschung & Züchtung Dottenfelderhof” in Germany, mainly with wheat and maize populations. Carl started his contribution with reporting about the model Dottenfelder Hof. He explained that this farm is the perfect place to experience the whole value chain of a product. There are the breeders, the farmers, the bakery shop and the consumer all in one place. This can be an enormous advantage, because the breeders can communicate with every actor of the food chain exchanging experience and developments. Carl outlined how important it is to support on-farm breeding in the organic sector in order to get efficient results. Carl reported about the very small market share of organic/biodynamic wheat varieties in Germany. The most common reason is that farmers simply do not have information that the variety exists. Seed multiplication is also an important issue the breeders on Dottenfelderhof are working on, even though this comes with a big economic risk. One big problem of spreading the idea of organic plant breeding is as well the marketing. There is no marketing system existing, which could help spread the information and the new ideas among the farmers. A huge problem is also, that it is very difficult to get the necessary finances for breeding activities. This could also cause the problem that young people are not attracted anymore to work in this field, because it is very hard work for very little money. He highlighted that now is the time to act and turn towards organic breeding in order to generate the desirable change.

David Price (Seed Co-operative, UK) is immersed in agro-ecology, specifically open pollinated seed and participatory plant breeding. The Seed Co-operative is a community owned company which engages with people who eat. Through engagement about the issues around organic seed the topics grow in scope and scale to cover the whole food system, highlighting issues that are faced and how organic systems provide solutions. Active engagement is sought through gardening, cooking, farming, volunteering at the seed company, retailing of seed, seed production and breeding, financial investment and sharing of skills and knowledge. An intellectual engagement is sought around health, diversity and democracy. Health of people and planet are dependent on healthy soils rich in microbes. Diversity is nature's software; enhancing biodiversity, genetic crop diversity and business model diversity allows natural adaptability and inherent resilience. Democracy requires real choice with provenance, and authenticity based on the collective collaboration of individuals and multiple stakeholders, not the dominance of a few global corporations.



Photo: (from right to left) Hans Martin Lorenzen, René Groenen, Barbara Maria Rudolf, Carl Vollenweider, David Price

Conference panel 3: Policy aspects and strategies for promoting organic plant breeding in Europe

This panel was mainly about including the policy sector into the discussion of new organic breeding developments. Here it is most important to spread knowledge and awareness of the topic in general. Networking between practitioners and politicians must continue and increased to develop and broaden the political dialogue. The moderator proposed that all the breeders, farmers and activists in organic plant breeding must organize collectively instead of current individual fighting in order to bring all different sectors i.e. production, market and policy together.

Martin Häusling (MEP, The Greens/EFA) moderated the panel. His first question addressed the opinion of the Commission regarding the new European seed regulation. His team had launched their own regulation proposal for organic seed. The goal is to align the standards in Europe. He requested also an increase of the total share of organic agriculture and breeding in EU research for compensation of present inequalities.

Thomas Weber (European Commission, DG Sante) is mainly responsible for seed marketing legislation and plant genetic resources. He reported about the preparation of the new research framework program. He mentioned the importance of further support of wide range research in order to find a more efficient way of forming roles for the sector. The research program is to be extended but guarantees cannot be given by the Commission.

Blanche Margarinos Rey (Artemisia Lawyers, Paris) asked which measures are politically necessary to move the sector forward? There is a temporary “experiment” organized by the Commission on organic varieties suitable for organic production – but there is still a lot of room in the basic process to be filled up with experience with yearly reports. These reports should include research about the special characteristics of the different varieties in order to adapt the horizontal legislation to the marketing of seeds. Blanche pointed out that DG Sante and the European Commission could do much more to strengthen the support, the emergence of the sector and its research.

Thomas responded that the commitment to develop the mentioned experiment is assured and continuing. One problem is the issue of fact finding, to get together the diversity of expectations and demands of the sector, i.e. breeders, producers, retailers and consumers. More conferences like this one are needed in order to bring together all different aspects of the food chain and work towards a common goal.

Alexander Gerber (vice-president of Demeter-International) referred to the problematic issue that the organic breeding development varies enormously among EU member states. Do we need to get every country on track or is it better for some advanced countries to intensify the engagement of organic seed breeding? He suggested to do both. There are those countries, which can quickly move forward and build real life examples. But it is also important to develop laws and subventions for each country in Europe. Alexander described the situation of breeders and farmers in the past until now and pointed out the importance of the new organic seed regulation. We had examples of a few breeders who made clear that organic breeding is necessary, and it is working. Within the new regulation we are also able to lift it to a widespread awareness level inside the EU. But he made it also clear that the regulation is not the end of what must be done. He pointed out some missing details in the regulation as for instance that the developing of organic breeding must be ensured for generations.

Eric Gall (IFOAM EU Group, Brussels) was confronted with the following question: the sector is funded by just 1% of total subsidies. Would it be enough effort to implement a higher funding rate for organic breeding or is there something else missing? What does it need to push this sector on to a European level?

Eric emphasized the importance of research and a greater funding in this sector as well, but he added that this will not be enough. Important is also the change on the policy level. The agricultural system in Europe is very diversified in culture, climate and markets. The organic market is not a niche market anymore with a growth of 15%, same as growth in production in most European countries. There is already a change visible in the system. It is important to create a long-term vision for the agriculture of the future. He explained the system in the past as a “one sized system”, which was mainly made for industrial breeding with strict and detailed requirements, but which does not meet the different needs of different farming systems that we have in Europe. Regarding this former outdated development Eric thanked the EU institutions for their work on the new regulation, which means the first step for transformation. It is now our task that this new provision really helps farmers with databases to use the diversity which exist in seeds (which should apply not only to populations, but also to landraces and farmer varieties as well). The new provision of the Commission should be as flexible as possible.

In this context, Blanche Margarinos Rey emphasized the importance of differentiation. Doors must not be closed through the delegated act on heterogeneous material within the ongoing discussion which is mainly about: what is a variety, what are traditional varieties, landraces and populations? In the past, candidate varieties for registration were obliged to show uniformity. If now the traditional varieties wanted to be placed on the market, they would have to prove that they are not uniform. We had to find solutions in the sense, that were originally intended by the European legislator. Blanche made an official request in this panel to the Commission to establish a round table in order to get into communication instead of confrontation.

Thomas Weber responded: in his point of view traditional varieties are varieties and they are not excluded from the market. They can be registered, even though it is not implemented in a harmonized way, but it is a very simple procedure in just some Member States. All what is required is a description, which is provided by the applicant. There are quantity restrictions, which clearly show a weakness, which needs to be taken care of in order to solve this problem. He pointed out that there won't be any door closed from the side of the Commission. What still needs to be discussed is, under which conditions the varieties are marketed. The main objective of the temporary experiment is to see which

testing mechanism is appropriate for these varieties. Farmers obviously want to know the advantages and disadvantages concerning the performance of the varieties under different conditions.

Summarizing the panel discussion, it can be stated that EU policy makers and institutions are open to intensify the dialogue with breeders, farmers and other stakeholders.



Photo: (from right to left) Martin Häusling, Alexander Gerber, Eric Gall, Blanche Margarinos Rey, Thomas Weber