



Business models for organic plant breeding – chances and challenges

Report of the expert workshop of Demeter-International e.V.

Location: Bingenheimer Saatgut AG, Germany on 22-23/6/2017

This expert workshop was part of the project “Promoting Organic Plant Breeding in Europe” which was initiated by the Demeter-International e.V. EU Liaison Office in Brussels in 2016. The workshop was organized in cooperation with Bingenheimer Saatgut AG and Kultursaat e.V. and was supported by the IFOAM EU Group.

The aim of the workshop was to exchange experiences and discuss approaches to build successful networks and business models for organic plant breeding (OPB) as well as to increase the use of organic plant varieties on organic farms. Moreover, strategies to face the risks associated to new gene technologies were subject of the meeting. It was well attended by breeders, representatives of OPB and seed initiatives, farm advisors, organic farmers, representatives of seed production companies, scientists and other interested stakeholders from 11 countries (Austria, Belgium, Germany, Greece, The Netherlands, Slovenia, Switzerland, Portugal, UK, US and Argentina).

In the morning session of the first day, the participants had the opportunity to listen to the presentations of Michael Fleck, Bernadette Oehen and Eva Gelinsky.

Michael Fleck, managing director of Kultursaat e.V., talked about the historical background, the funding and the work of the vegetable breeders’ association Kultursaat in his presentation “*Network of organic seeds and biodynamic breeding (vegetables–solely open pollinated)*”. In 1985 a number of biodynamic vegetable producers, who were involved in multiplication and breeding of open pollinated varieties, set up the “Initiativkreis für Gemüsesaatgut aus biologisch-dynamischen Anbau” (the Initiative circle for vegetable seeds from biodynamic farming). To promote their breeding work, raise funds and coordinate their breeding activities, members of the “Initiativkreis” established the (non- profit) association Kultursaat in 1994. The association works with 30 breeders and is involved in breeding research and development of new organic varieties. According to Kultursaat principles, seed saving must be possible, which means no hybrids are bred. Up to now, 75 new Kultursaat varieties are officially registered and listed by the Bundessortenamt.



Picture 1 Michael Fleck, Managing Director of Kultursaat e.V.

Bernadette Oehen, FiBL, Department of Socio-Economic Sciences, reported in her presentation “*Marketing of organically bred varieties – models and experiences from case studies*”, about the displayed structure and first results of the EU project “DIVERSIFOOD” that is funded under the Horizon 2020 Programme. By integrating existing networks across Europe, this project will strengthen the food culture to achieve local high-quality food systems. She then outlined best practice models used to inform and involve consumers about products made of organic varieties such as the Bioverita logo.



Picture 2 Bernadette Oehen, Socio-Economic Sciences Department of FiBL

Eva Gelinsky, policy director of the Initiative for GE-free seeds and breeding – IG Saatgut, described in her presentation “*New Gene Technologies. State of play in politics - Consequences for organic plant breeding*” the new gene techniques (NGT) used in plant breeding such as CRISPR-Cas. She explained that these techniques mean technical intervention in the genome and therefore must be regulated as GMO according to EU law. However, she outlined that political discussions are ongoing and it is still not decided if NGT will finally in practice be regulated as GMOs in Europe. She explained that it would be irresponsible to allow the new GMOs onto the market without prior risk assessment due to potential non-target effects of the techniques; if varieties produced with new GM techniques would enter the market without any labelling and traceability requirements this would also lead to a high risk of contamination which might jeopardize further development and innovation in organic breeding.



Picture 3 Eva Gelinsky, Policy director of the Initiative for GE-free seeds and breeding – IG Saatgut

In the afternoon, 3 parallel working groups took place to further elaborate and discuss the content of the presentations. The main results of the discussions are presented below:

Workshop 1: From grassroots to seed work¹

Leading Questions: *How to build up networks to support organic plant breeding and maintenance of organic varieties? What models could help financing?*

Participants exchanged experiences and best practices about networks and business models from various countries connected to OPB. We heard about the success and challenges of networks from Portugal, Argentina, Greece, Slovenia, Germany, USA, Belgium and the UK.

Main outcomes:

- When starting a seed initiative, always look at what is already there, in terms of formal or informal seed networks (e.g. seed savers)
 - Example UK: Stormy Hall Seeds have been supplying biodynamic seeds for over 20 years – now they joined forces with the UK Seed co-operative
 - Example Slovenia: Many hobby gardeners have local seeds, however there is no quality assurance – there is a basis to build on it, but a lot to improve
- Challenge 1: bringing organic/biodynamic varieties to the market
 - How to market these varieties? What terms and wording could help marketing?
 - The term “slow breeding” came up, which would be in line with the slow food movement; However, this term could be misleading, since OPB needs to become faster to hold up with other plant breeding techniques
- Challenge 2: the earning potential is not great for organic seed production
- Generally organic plant breeders / multipliers are scarce and there is a need for more practitioners
- Examples:
 - business model: Kultursaat e.V. is both, an economic and a cultural initiative, with the main aim to support OPB financially – yet the driving force behind the breeding work is the cultural impulse of the people behind it
 - other plant breeding companies/organizations are only based on economic motives and highly market oriented
 - Best practice model retail: Estafette Odin (Netherlands) is a retailer creating awareness among consumers about organic seed production and pays a percentage of its revenue to OPB
 - Seed co-operative UK communicates along the following line: 1. Community owned seed company 2. Food and people are connected 3. Diversity is nature’s insurance policy 4. We need a resilient food system 5. Therefore, we need open pollinated varieties 6. This only works when we breed organic/biodynamic.

¹ Organizations/Initiatives/Companies involved in the discussion:

Sementes Vivas (Portugal); EcoSeed Initiative for South America; AEGILOPS – The Greek Network for Biodiversity and Ecology in Agriculture; Organicseeds Institute (Slovenia); RAGOR, Development Agency of Upper Gorenjska region (Slovenia); Seed Cooperative (UK); Bingenheimer Saatgut AG; FiBL (Switzerland); Trinity farm (Greece); Act Alliance EU (Belgium); Demeter-International e.V. (Belgium); Organic Seed Alliance (US)

Workshop 2: From breeder to farmer to consumer²

Leading Questions: *What does the market expect from organic varieties and how can we improve communication and marketing?*

The participants discussed how the different stakeholders of the supply chain can cooperate closely for the development of organic varieties, taking into account consumer's needs. Special attention was paid to how farmers could adopt them. Best practice examples were presented which have the potential to lead to successful business models for the development of organic varieties and improve their communication and marketing.

Main outcomes:

Communication of the organic varieties

- The majority of the consumers believes that organic food derives from organic seed, but approx. 95% of the seeds used in organic agriculture are conventional.
- A label, logo or trademark could help to communicate the added value of organic varieties towards the consumers
 - In 'anonymous' markets such as supermarkets an extra logo could add value to the end product but,
 - in local markets and 'direct sales' models (i.e. community supported agriculture farms) this is not the case as farmers can directly explain the added value.
- Using information about health, always in accordance with the EU regulation and
- Communicating 'values' to consumers such as traditional crops and local production can be an asset.
- Farmers should work closely with breeders and researchers and be well-informed about the new organic varieties.
- Different approaches are needed as there are different markets (anonymous vs local markets)
- Role of 'Influencers', such as famous cooks and restaurants, in using open pollinated organic varieties as they can shape the consumers' opinion.
- Education in schools in general about 'where our food comes from' will –potentially - shape the opinion of future organic consumers
- Exchange best practices among the different countries
- Further research is needed on the nutritional value of open pollinated organic varieties

Best practice examples: Involvement of the different actors of the food chain

- Estafette ODIN BV with the project 'Diverse and locally produced'
 - Breeders, growers and processors cooperated and tested open pollinated wheat varieties and their uptake by the whole supply chain
 - Testing at the field, baking quality and finally taste-tested by consumers; similar trials were conducted for vegetables as well.
 - Odin sells products from the new varieties (and old varieties) with label "zaadvast" (open pollinated)
- The 'FAIR-BREEDING Initiative from Kultursaat e.V & Naturata.
 - on- going, focused on organic breeding of cauliflower
 - system is based on the agreement of the involved shopkeepers to support biodynamic breeding by giving an amount of money (0,3% of their net profits) to the breeders.

² Organizations/Initiatives/Companies involved in the discussion:

IFOAM EU Group (Belgium), Organic Seeds Institute (Slovenia), Demeter-International e.v. (Belgium), Louis Bolk Institute (The Netherlands), Organic Research Centre (UK), FiBL (Switzerland), Kultursaat e.V, Elpro GmbH.

Workshop 3: New gene technologies (NGT) – how to cope with the challenge?³

Leading Question: *Strategies for organic plant breeding?*

In this workshop, there was exchange of information about the state of discussion in the different countries/groups regarding the new gene techniques used in plant breeding. The participants discussed the political goals and communication of the problem and tried to develop strategies in case of NGT would not be regulated under the GMO regulation.

It is widely agreed that NGT are genetically modifying and the legal definition of a GMO is quite clear about these techniques. The question, whether NGT will finally be regulated under the EU directive for deliberate release of GMO (2001/18), is under discussion between different EU institutions and stakeholders. Whereas the definition of GMO used in this directive is actually quite clearly including these techniques.

Main outcomes:

State of discussion about NGT in different European countries:

- Austria: It is clear that the CRISPR-Cas and gene editing techniques fall under the scope of GMO regulation.
- Switzerland: There is a great hype in favour of NGT from the side of the government as well as the side of the media, but it is still not clear what will happen.
- The Netherlands: A motion that passed the Parliament was launched that states that CRISPR-Cas techniques should be excluded from the GMO regulation.

State of discussion about NGT in different companies & associations:

- For associations, like Kultursaat e.V., it is clear that these NGT are not wanted or accepted.
- Companies with a conventional production sector like Vitalis (mother company ENZA zaden) and Bejo Zaden are facing a more complex picture; they will orientate towards what their customers want.

What should the organic breeding sector do to protect itself against NGT?

- Political efforts to come to a situation where NGT are regulated under GMO law must continue.
- The organic sector cannot wait for the decision makers in Brussels to take a decision, but needs to prepare itself now for different possible scenarios.
- In any case, there must be full transparency among the value chain about NGT and their use. At first, there could be private bilateral and multilateral agreements between companies.
- The Demeter general assembly has already decided to create a “positive list” where varieties, that had been produced without NGT, are listed and only listed varieties could be used. This might be a model for the whole organic sector.
- The question, in how far NGT will be technically detectable in plants and products, will depend on technical development and political will.

³ Organizations/Initiatives/Companies involved in the discussion:

Vitalis Biologische Zaden (The Netherlands), Bejo Zaden (The Netherlands), Arche Noah (Austria), IG Saatgut (Switzerland), Kultursaat e.V.(Germany), Demeter-International e.V (Belgium) & Demeter Germany.

In the morning session of the second day, the participants had the opportunity to report and discuss what is going on in their regions with regards to OPB and marketing of organic varieties.

A presentation of **Bram Weijland, coordinator of organic business of the company Bejon Zaden**, introduced the difference between “Breeding for Organic vs Organic Breeding” and showed the activities of the company with regards to produce varieties suitable for organic agriculture. He questioned that OPB principles (no sterile hybrids), and the proposal of the new EU organic legislation do not sufficiently consider companies like Bejo Zaden that produce according to market demand.

After the fruitful discussion, the participants went on an excursion to the breeding fields of Bingenheimer Saatgut AG. The breeders **Kornelia Becker** and **Alex Edleson of Kultursaat e.V.** presented their breeding work on varieties of zucchini, broccoli, cauliflower, fennel and others.

Following the field excursion, **Gebhard Rossmannith, CEO of Bingenheimer Saatgut AG**, presented the facilities of Bingenheimer Saatgut AG and explained how the processing of the seeds is taking place from the time they are harvested until they are packaged and delivered to the customers.



Picture 4 Excursion on breeding fields



Picture 5 Gebhard Rossmannith CEO of Bingenheimer Saatgut AG