

Breeding as a dialogue

Rheinauer Theses on Organic Plant Breeding June 2011
Based on the "Rheinauer Theses on Plant Rights" from 2008,

On behalf of Bio Suisse, in order to conceptualize Organic Plant Breeding according to the Theses, aiming at giving organic breeders and Bio Suisse a basis for decisions that meet the ethical basic values of organic farming,

And thus to gain ethically based arguments in the discussion on the relation between the dignity of plants and novel breeding techniques,

And through this to make available a decision basis for how novel and future techniques can be rejected or approved in the definition of organic farming,

We formulate the following Rheinauer Theses on Organic Plant Breeding under the aspect of Breeding as a dialogue.

1- The plant, our "conversation partner"

Plants are living organisms with their own life form. They are related to animals and humans and share a common origin with them.

Unlike animals and humans however they have their own systems. They are place-bound and conduct photosynthesis.

Plants communicate with one another and with other living organisms; they learn from experience and are able to remember. They adapt individually to a continually changing environment. They live in a dynamic network of relationships and interactions in their specific locations.

Plants show aspects of a "social life"; they have complex relations with one another and with other living organisms.

They cooperate with one another; they form alliances, compete and fight against each other.

We know little about the sentience of plants. Cellular and molecular biology provide evidence that allow sentience to appear possible; a complete chain of evidence, however, is lacking up to this point. To assert that plants have no sentience and can feel neither pain nor joy is as speculative as the opposite assertion.

Plants are therefore no passive "bio- automatons" with exclusively genetically determined reflexes.

On the contrary: Plants experience the world in their own way. They have their own existence. This is difficult for us to understand. Nonetheless, we perceive that it exists.

We cannot completely grasp the essence of plants scientifically. Despite their predominant significance in modern societies, natural sciences are but one mode among others of acquiring knowledge. There are further avenues to knowledge which play a role in breeding, e.g. intuitional, emotional, aesthetical ones.

2- Breeders in "dialogue" with plants

Cultivated plants are the basis of our nutrition. Our culture cannot be separated from plants. Breeding as a co-evolutionary process has been taking place for thousands of years.

Breeding as a "dialogue": - A "dialog" with plants – that is a mutual responsiveness to one another – confronts us with difficulties since plants are so different from us.

Plants and breeders interact in the breeding process. Breeders can establish a personal relationship to plants.

They observe in plants' reactions whether their suppositions were correct and if the desired changes – while respecting the nature of the plants – are possible. It is a matter of a dialogue with the plants lasting several years, and not a monologue of the breeder.

Breeding includes genetic insights, but involves far more than the selection of suitable genes, as a plant is more than the sum of its genes.

Environmental factors can influence genetic make-up and in turn breeding. A reductionist view of breeding, which concentrates on genes alone, is inadequate.

Breeding must include a plant's local, cyclical and generation-spanning dimensions.

Breeding also means: Development of life-partnerships, as for example, host-pathogen relationships, soil-mycorrhiza networks, mixed cultivation, plant communities and plant-animal communities.

The dignity of the plant as such, is not an independent reality; it is the consequence of human behaviour: we assign individual worth to a plant, regardless of human interests. This entails responsibilities towards plants, and means we must set limits to their arbitrary and total instrumentalization.

The system of organic farming must be recognized as a spatial limit, the integrity of the cell (no interventions below the cellular level) as a technical limit, and the banning of patenting as a legal limit.

Organic Plant Breeding respects these limitations and commits itself to maintaining cultivated plants' fertility, autonomy and ability to evolve.

Analyses at the molecular level for diagnostic purposes or in the area of basic research are not thereby restricted.

Organic Plant Breeding is characterized by openness towards the plants, the environment and its cultural and social context.

3- Plant Breeding as "dialogue" in a social context

In order to bring organic plant breeding within the framework formulated to full development in the medium term, the following efforts by society are required:

- Organic Plant Breeding ensures breeding is perceived once again as a task belonging to society as a whole. In this way it will form a counterweight to the ongoing monopolization of the seed sector.

- Organic Plant Breeding – as a responsibility of society – requires broad-based financing of its work. As a consequence, the whole supply chain must be involved both in the breeding process as well as in the financing: farmers, processors, distributors, consumers and the government.
- Organic Plant Breeding includes farmers' practical knowledge and enjoyment of experimentation.
- Organic Plant Breeding generates authentic products, which offer the consumer exceptional taste and enjoyment.
- Organic Plant Breeding commits itself to furthering the development of organic farming.
- Organic Plant Breeding ensures transparency and honesty. What is done – and why this is so and not otherwise, must be explained.
- Organic Plant Breeding guarantees the free and unrestricted exchange of breeding material.
- Organic plant breeding needs the support of science: Much more empirical, interdisciplinary and participatory research is necessary in order to be able to cope with current and future challenges.

Recommendations to Bio Suisse

1. Bio Suisse ensures that the results of Organic Plant Breeding are used in practice; Organic Plant Breeding is to become the standard.
2. Bio Suisse communicates the concerns and aims of Organic Plant Breeding actively – both internally and externally.
3. Bio Suisse ensures that biodiversity is increased at farm level.
4. Bio Suisse also supports Organic Plant Breeding financially, and helps to ensure its long-term financing.
5. Bio Suisse commits itself to ensuring that the specific demands of Organic Plant Breeding are taken into account by the official variety approval processes.
6. Bio Suisse defines the guidelines of Organic Plant Breeding and updates the regulations as the circumstances may require.

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