

Organic Plant Breeding (OPB)

In Organic Plant Breeding is defined by the IFOAM International norms of 2014

[Article 4.8 Breeding of organic varieties](#)

Organic cultivars are obtained by an organic plant breeding program which fulfil following requirements:

- 4.8.1 To produce organic varieties, plant breeders shall select their varieties under organic conditions that comply with the requirements of this standard. All multiplication practices except meristem culture shall be under certified organic management.
- 4.8.2 Organic plant breeders shall develop organic varieties only on the basis of genetic material that has not been contaminated by products of genetic engineering.
- 4.8.3 Organic plant breeders shall disclose the applied breeding techniques. Organic plant breeders shall make the information about the methods, which were used to develop an organic variety, available for the public latest from the beginning of marketing of the seeds.
- 4.8.4 The genome is respected as an impartible entity. Technical interventions into the genome of plants are not allowed (e.g. ionizing radiation; transfer of isolated DNA, RNA, or proteins).
- 4.8.5 The cell is respected as an impartible entity. Technical interventions into an isolated cell on an artificial medium are not allowed (e.g. genetic engineering techniques; destruction of cell walls and disintegration of cell nuclei through cytoplasm fusion).

Most important characteristics of OPB programs is that **all breeding steps** from crossing till final selections take place **under organic conditions** and that the applied breeding techniques are in accordance with the techniques listed in the Annex of the position paper of [IFOAM International for organic breeding](#) from November 2017.

Moreover, cultivars derived from OPB shall also not be patented.

Breeding for Organic (BfO)

Breeding programs for organic are more product oriented and have a special focus on the breeding goals which are specific for organic agriculture (e.g. tolerance against seed born diseases, weed tolerance, nutrient use efficiency), they do not use critical breeding techniques and selection occurred at least partially under organic conditions.

BfO programs fulfil following requirements:

- Plant breeders shall select their cultivars **at least in the final selection steps under organic conditions**. All multiplication practices except meristem culture shall be under certified organic management.
- Plant breeders for organic shall develop varieties only on the basis of genetic material that has not been contaminated by products of genetic engineering.
- The genome is respected as an impartible entity. Technical interventions into the genome of plants are not allowed (e.g. ionizing radiation; transfer of isolated DNA, RNA, or proteins).
- The cell is respected as an impartible entity. Technical interventions into an isolated cell on an artificial medium are not allowed (e.g. genetic engineering techniques; destruction of cell walls and disintegration of cell nuclei through cytoplasm fusion).

Most important characteristics of OPB programs is that **derived cultivars are suited for organic production** and that the applied breeding techniques are in accordance with the techniques listed in the Annex of the position paper of [IFOAM International for organic cultivation](#) from November 2017.

Further information on OPB and BfO can be found in the [position paper on organic plant breeding of the European Consortium for Organic Plant Breeding](#) (ECO-PB (2012)).