BDP WHAT WE EXPECT FROM EUROPE

THE PLANT BREEDERS' OUTLOOK
ON THE ELECTORAL TERM 2024–2029

Resilient plant varieties for a sustainable agriculture

In view of the major challenges facing our environmental, agricultural and food systems, it is clear that "business as usual" is not an option. Strategies such as the Green Deal have set the roadmap for upcoming transformations. Their success will depend to a substantial degree on the performance capabilities of the plant breeding industry.

Moving away from fossil towards alternative raw materials, transforming cultivation systems, reducing the use of pesticides and fertilizers: A prerequisite for achieving these goals of eco-friendliness paired with agronomic efficiency, is the availability of resilient plant varieties. In the light of climate change challenges, it is crucially important that the right balance is struck between ecology on the one hand and economy on the other.

Framework conditions for plant breeding

It takes a lot of time and money to develop a new plant variety. **Intellectual property protection** creates incentives to invest into plant breeding innovation. Both farmers and consumers profit from the rich choice in plant species and varieties. Continued plant melioration depends on suitable adaptation and enhancement of the existing legal schemes regulating intellectual property protection and also the **access to genetic diversity**.

The findings of **plant breeding research** allow to tackle previously unattainable or novel breeding objectives. They also facilitate a more efficient development of new plant varieties. There is an urgent need for research to develop plants that meet new requirements with regard to certain nutritional styles, or of plants resistant to pests. The same can be said of large datasets, the use of which in plant breeding holds immense potential for the efficient implementation of breeding objectives.
The development of tailor-made varieties requires a broad spectrum of methods. **New breeding methods** such as CRISPR/Cas complement existing methods; they open up opportunities for precisely targeted plant development and help to shorten time-consuming breeding processes. The methods must be accessible to a large number of companies.


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The use of only the best plant genetics and highest seed quality are an asset to arable farming and plant cultivation, as well as to green spaces and gardens in Germany and Europe. To ensure this, **neutral and objective testing systems for plant varieties** are crucial.

Plant innovation scheme

The framework conditions required for plant breeding cannot be viewed in isolation from each other, but should be coherently coordinated and further developed with a long-term perspective in mind. Plant breeders in Germany are therefore calling for the „plant innovation scheme" to be advanced as quickly as possible.

Plant breeders shoulder great responsibilties. From farm to fork, a great deal depends on their output, be it environmentally adapted cultivation, successful harvests or the suitability of the crop for the subsequent food and feed processing.

The plant breeding industry in Germany features a unique structure: a great number of companies which are constantly and efficiently developing improved varieties across a wide range of different crop species.

Expectations from politics

1 Strengthen plant variety protection

The development of a new variety is time-consuming (10 to 15 years) and cost-intensive (up to 5 million euros). Plant breeders depend on the payment of licence fees and of farm saved seed royalties for a return on their investments into the development of new plant varieties. The legal situation regarding the collection of farm saved seed royalties is unacceptable. Legal loopholes and case law combine to create a situation where plant breeders miss out on approximately half of their receivables from farm saved seed royalties.

Plant variety protection in its role as the primary intellectual property right in plant breeding needs to be strengthened. A legal framework needs to be created that ensures that farm saved seed royalties are paid in full. More precise provisions on the modalities for farm saved seed royalty payments are the only way to ensure continued and sufficient investment into the development of new varieties.

2 Restrict patentability

Technical inventions are not covered by plant variety protection. Instead, the more restrictive patent protection must be sought. The fact that essentially biological processes and the resulting plants may not be patented is a key element in maintaining access to genetic diversity, which is vital for the work of plant breeders. In recent years, however, the number of patents granted in the field of plant breeding has seen a sharp increase, due to new methods for the description of genetic characteristics found in nature, for the sequencing of entire genomes and for precise genome editing.

Free access to genetic resources is fundamental to the process of plant breeding. Biological material that also occurs or could occur in nature shall not be patentable, irrespective of the way in which it has been developed. Breeders are calling for this principle to become legally binding as soon as possible. Until then, licensing platforms such as the ACLP (Agricultural Crop Licensing Platform) or the International Licensing Platform Vegetable can help maintain the ability of plant breeders to operate. Hence, they should be supported by politicians as an interim solution.

3 Enable the use of new breeding methods

New breeding methods are a useful addition to existing plant breeding methods. They have the potential to shorten the reaction time of plant breeding when new problems occur, enabling breeders to come up with a solution for agriculture at shorter notice. Thanks to the precision of the technology, it is possible to develop plants that do not differ from those created by using traditional crossing and selection, except that their development takes much less time. Plants developed by means of new breeding methods are currently classified indiscriminately as genetically modified organisms (GMOs). The associated stringent requirements make it unlikely that the methods will ever be used. Even when used to create plants that do not differ from plants that could occur naturally or from plants that could also be bred by means of crossing, the requirements are such that they cannot be met - to the detriment of agriculture and society.

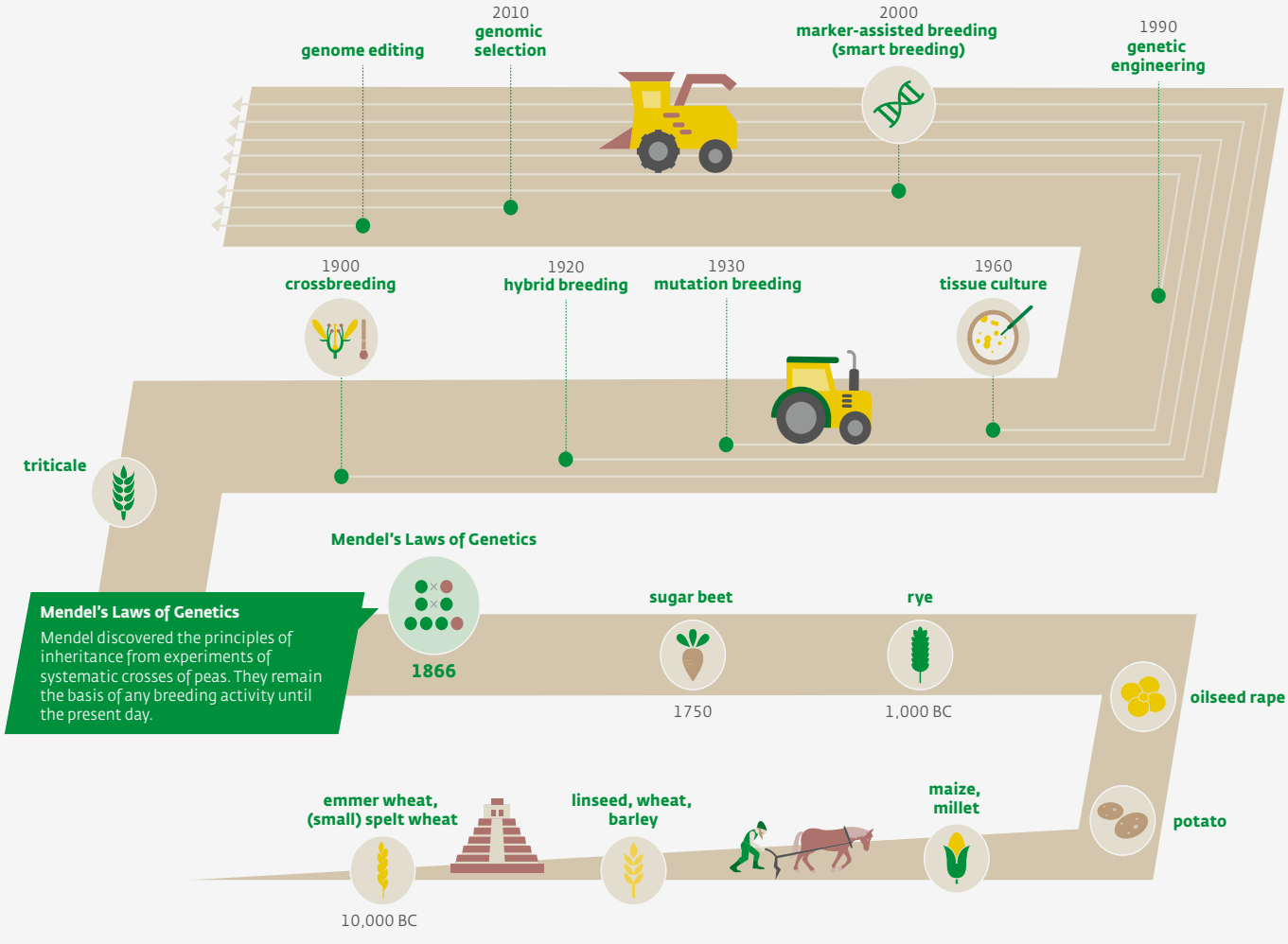
Legislation must be adapted so as to take account of scientific findings and of the latest developments in plant breeding. Plants that do not differ from conventionally bred plants should not be regulated as GMOs. The use of New Breeding Methods on fair terms must be ensured for as many companies as possible, also in the light of the intellectual property rights schemes. The EU Commission's proposal for a regulation of plants obtained with the help of certain new genome editing methods should be implemented as quickly as possible.

4 Intensify research funding

The increasing demands for a sustainable, climate-resilient crop production have a direct impact on breeding objectives across all crop species. New breeding objectives require a great deal of research. Plant research needs to be intensified, in particular research into interactions between pathogens and crops, into new breeding methods and into the use of data science to identify and select suitable plants. This is a prerequisite for plant breeding to be able to continue to develop solutions, such as ways to reduce the use of pesticides. At the same time, existing programmes such as the bioeconomy research projects should not be neglected.

It is crucial that fundamental research as well as the subsequent transposition of research findings receive strong support, especially as regards the utilisation of plant genetic resources, applied and practice-oriented research. Pre-competitive plant breeding research activities must receive stronger political support at national and at European policy level. If the results of plant research are to be transposed into practical agronomic solutions, comprehensive and long-term funding (up to 15 years) is needed to create the planning security for private plant breeding.

// Milestones of plant breeding



5 Ensure global access to plant genetic resources

A large genetic diversity is the basis of successful plant breeding. Therefore, unimpeded global access to plant genetic resources is of crucial importance. This demand refers not only to the plant varieties developed by plant breeders, but also to genetic resources from gene banks and to wild plants from other continents and climates around the world. Access to so-called digital sequence information also needs to be ensured.

What is needed are binding agreements on the terms under which plant genetic resources can be used, with fair terms for both users and providers and designed in such a way that access is neither obstructed nor prevented altogether. If the scope of existing legal instruments were to be enhanced, any detrimental effect on the conservation and research of biodiversity needs to be avoided.

6 Preserve the tried and tested principles of seed marketing law

European seed law plays an outstanding role in achieving the goals of the European Green Deal and in implementing the respective strategies. Plant variety registration and seed certification under official control ensure that seeds and plants for planting are of the best possible quality and safeguard fair competition. This legal scheme needs to be preserved.

A modernisation of the seed marketing legislation should focus on increasing both procedural and cost efficiency. Any additional or more extensive exemptions from the legal requirements governing the marketability of plant varieties and of plant propagation material are bound to weaken the quality of seeds and plants for planting and thereby jeopardise the agricultural production and environmental goals. In order to ensure equal treatment of all market participants, the marketing regulations for the professional as opposed to the non-professional sector need to be clearly defined.

7 Ensure sustainable use of plant protection products for plant breeding

Plant breeding and hence also breeding nurseries and trial sites are crucial for the development of new varieties for agriculture. Plants with improved resistances and tolerances help reduce the use of plant protection products across the entire cultivation areas. The use of plant protection products is indispensable in variety development, since there is no other way to ensure the production of high-quality seeds from new crossings and reliable selection during the breeding process. Plant protection products are also essential for the production of healthy seeds and plants for planting that are free from transmissible diseases. This in turn contributes to a reduced need for plant protection products in subsequent large-scale commercial plant cultivation.

Limited to the minimum amounts necessary, it must be ensured that it is possible to use plant protection products in breeding nurseries, on trial plots used for variety testing or areas used for the production of seeds or plants for planting. This also applies to plots in so-called sensitive areas and other area-related restrictions where plant breeding and environmental and nature conservation areas intersect.

Plant breeders' demands

1 Strengthen plant variety protection

Plant variety protection needs to be strengthened as the primary intellectual property protecton in plant breeding. The statutory provisions governing the use of farm saved seed need to be clarified to ensure that farm saved seed royalties are paid in full.

2 Restrict patentability

Free access to genetic material is fundamental to the process of plant breeding. Biological material that also occurs or could occur in nature shall not be patentable, regardless of how it has been developed. Breeders are calling for this to be ensured in a legally binding manner as soon as possible.

3 Enable the use of new breeding methods

Legislation needs to be adapted to take account of scientific findings and most recent developments in plant breeding. Plants that do not differ from conventionally bred plant varieties should not be regulated as GMOs.

4 Intensify research funding

Pre-competitive plant breeding research activities must receive stronger political support at national and at European policy level. Comprehensive and long-term funding (up to 15 years) of plant research is needed to create planning security for private plant breeding.

5 Ensure global access to plant genetic resources

Binding agreements on the terms under which plant genetic resources can be used are needed. They should establish fair terms for both users and providers and should be designed in a way that access is neither obstructed nor prevented altogether. If the scope of existing legal instruments were to be enhanced, any detrimental effect on the conservation and research of biodiversity needs to be avoided.

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Plant breeding in Germany

German Plant Breeders' Association (Bundesverband Deutscher Pflanzenzüchter e. V. – BDP)
The German Plant Breeders' Association (BDP) represents the professional interests of its members - plant breeding companies for agricultural plants, vegetables, ornamental plants or grape vine, as well as seed traders. Approximately 130 member companies are breeding or trading in seeds of agricultural or horticultural plants, 58 of which are operating own breeding programmes. Most companies are working with more than one crop. BDP works on national and European level for a legal framework that is best suited to promote plant breeding and the seed industry as well as for the organisation of plant research, the promotion of new technologies and the further enhancement of plant variety protection and seed marketing schemes.

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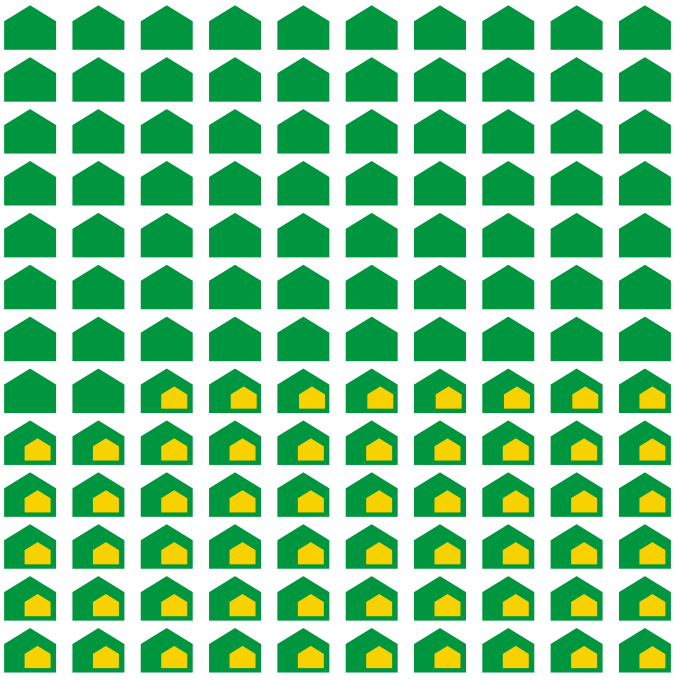
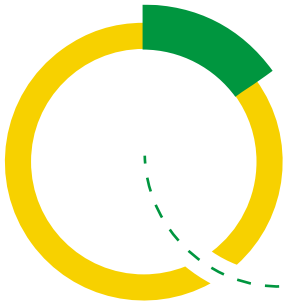
Plant Breeders and Seed Traders

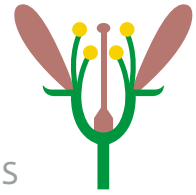




16,3 %
R&D-to-turnover ratio

German breeding programmes for **115** species

58 of which carrying out own breeding programmes



more than **3,500** registered plant varieties in Germany

Source: BDP Survey of 2020

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Plants – The Basis of Life