



EUROPEAN PARLIAMENT

2009 - 2014

Plenary sitting

A7-0044/2014

24.1.2014

REPORT

on plant breeding: what options to increase quality and yields?
(2013/2099(INI))

Committee on Agriculture and Rural Development

Rapporteur: Marit Paulsen

CONTENTS

	Page
MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION.....	3
RESULT OF FINAL VOTE IN COMMITTEE.....	10

MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION

on plant breeding: what options to increase quality and yields? (2012/2099(INI))

The European Parliament,

- having regard to the 2009 report of the UN Food and Agriculture Organisation (FAO) entitled ‘How to feed the world in 2050’,
- having regard to the International Convention for the Protection of New Varieties of Plants (UPOV Convention),
- having regard to the FAO International Treaty on Plant Genetic Resources for Food and Agriculture,
- having regard to the April 2013 report entitled ‘Headed for 9 billion - Can Europe afford to miss the potential of GM crops’ by Ivar Virgin/Stockholm Environment Institute, Timbro,
- having regard to the 1993 FAO report entitled ‘Harvesting nature’s diversity’,
- having regard to the website on the Svalbard Global Seed Vault¹,
- having regard to the Commission Communication of 27 March 2001 entitled ‘Biodiversity action plan for the conservation of natural resources’ (COM(2001)0162),
- having regard to Regulation (EU) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed²,
- having regard to Council Directives 2002/53/EC of 13 June 2002 on the common catalogue of varieties of agricultural plant species³ and 2002/55/EC of 13 June 2002 on the marketing of vegetable seed⁴,
- having regard to Regulation (EU) No 1830/2003 of the European Parliament and of the Council of 22 September 2002 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC⁵,
- having regard to Council Regulation (EC) No 2100/94 of 27 July 1994 on Community plant variety rights⁶,
- having regard to the note by the UN Secretary-General entitled ‘The right to food - Seed policies and the right to food: enhancing agrobiodiversity and encouraging innovation’

¹ <http://www.regjeringen.no/en/dep/lmd/campaign/svalbard-global-seed-vault.html?id=462220>.

² OJ L 268, 18.10.2003, p. 1.

³ OJ L 193, 20.7.2002, p. 1.

⁴ OJ L 193, 20.7.2002, p. 33.

⁵ OJ L 268, 18.10.2003, p. 24.

⁶ OJ L 227, 1.9.1994, p. 1.

(A/64/170, 2009, UN General Assembly),

- having regard to the conclusions of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), an intergovernmental process supported by the FAO, the Global Environment Facility, the United Nations Development Programme, the United Nations Environment Programme, UNESCO, the World Bank and the WHO,
 - having regard to Rule 48 of its Rules of Procedure,
 - having regard to the report of the Committee on Agriculture and Rural Development (A7-0044/2014),
- A. whereas its Committee on Agriculture and Rural Development aims, by means of this report, to launch a thorough debate and inquiry concerning the whole situation with regard to plant-breeding in European and global agriculture;
- B. whereas the plant-breeding industry is of fundamental importance as regards the productivity, diversity, health and quality of agriculture, horticulture, food and feed production and the environment;
- C. whereas, according to reports primarily from UN bodies the FAO and the WHO, as well as from the UN Intergovernmental Panel on Climate Change, the world population is expected to increase from the current figure of 7 billion to around 9 billion between 2040 and 2050, and could, moreover, reach as high as 10-11 billion;
- D. whereas this population growth will place extreme demands on agriculture, in particular the increased productivity that will be needed to meet the substantial rise in demand for food, and whereas the FAO estimates that the food supply will need to increase by 70 % over the next 30-40 years;
- E. whereas because between 30 % and 50 % of food produced in the EU is wasted, with the global average being around 30 %, a substantial part of the increased food supply needed could be met by better, more efficient and sustainable food production practices in developed nations in conjunction with enlarged storage and distribution systems in developing nations;
- F. whereas the main problem remains of how populations in different parts of the world will be able to feed themselves, as the cultivable land area declines due to inappropriate land use, including poor agricultural practices, a problem which has been exacerbated by climate change, and whereas opportunities to increase the area under cultivation are extremely limited, given that in many parts of the world it is thought to be quite unrealistic to bring new agricultural land into use, inter alia out of a concern to preserve biodiversity;
- G. whereas the FAO estimates that it will be possible to achieve approximately 10 % of an increase in agricultural production by cultivating new farmland, which means that around 90 % will have to be achieved by increasing the yields from existing farmland, and whereas products must also continue to be of a high quality;
- H. whereas over-exploitation of farmland could impoverish the soil and, in the worst case

scenario, lead to erosion and desertification; whereas the same applies to woodland, because converting woodland to farmland would have such a serious impact on the climate, water management and on biodiversity that it is an inconceivable option for increasing food production;

- I. whereas, in addition to a reduction in the area of farmland, agricultural productivity has levelled off, and worrying trends, including falling productivity, have been noted, and will have a seriously adverse impact on agriculture in the future and on human food needs;
- J. whereas food production depends not only on having sufficient land mass but also on factors such as the climate, water, energy, and access to nutrients; whereas in the future these basic resources will be more limited, and this lack of resources is likely to have an adverse effect on the increased demands on agricultural land use, production and viability;
- K. whereas major changes in the climate are likely to occur in the future; whereas for Europe this means a significantly drier climate in the southern regions, which are areas of great importance for the production of fruit and vegetables; whereas in central and northern latitudes within Europe, meanwhile, winters are expected to be milder and summers are expected to have considerably more rainfall than at present; whereas the consequences are very likely to include an increase in animal and plant diseases and a need for new farming techniques;
- L. whereas it is undoubtedly the case that European agriculture faces enormous challenges, and with more extreme weather conditions, such as droughts, floods and other natural disasters, farming will need to adapt in order to safeguard production; whereas the crops seen in the fields today cannot remain the same in the future if we are to meet the increased need for food;
- M. whereas the length of the protection of variety rights in respect of those plants that require an extended development period prior to the commercialisation stage is not sufficient to encourage commercial investment in their research and development;
 1. Stresses that, in order to respond to forthcoming challenges, such as future food supply needs and climate change, it is exceptionally important to have an effective and competitive plant-breeding sector;
 2. Notwithstanding the primary importance of healthy soil and diversity as regards agro-ecosystem resilience, stresses the importance of developing varieties that can cope with the conditions we expect to encounter in the future, for example increased precipitation and an estimated increased occurrence of plant diseases; notes that it is also important to preserve and develop existing diversity in Europe, both within the agro-ecosystem as a whole and as regards genetic diversity within strains and the absolute number of different breeds and landraces, as all these are needed to ensure that we can adapt to the challenges of climate change;
 3. Notes the need for crops that, for example, absorb nitrogen and phosphorus effectively, are more tolerant of drought and heavier precipitation, are resistant to pests and can withstand changes in temperature; underlines the fact that it is also necessary to develop perennial crops, i.e. multiannual crops; notes that, with multiannual crops, the land need not be tilled every year, making farming more environmentally sound;

4. Stresses that, as it takes on average 10 years to develop a new variety, from the research stage to the finished seed, and additional time to trial and commercially propagate that variety, even now there is a need to encourage substantially more research investment in order to meet future food needs and cope with climate change;
5. Stresses that, as opportunities to bring new land into use for farming are very limited, it is vital to facilitate the process of developing new crops that are characterised by their adaptability to the environmental conditions, suitability as regards the need for them to cope with scarce resources, support for sustainability goals, sufficient productivity and high-quality, and underlines the fact that it is also important to develop crops which are already widely used, in order to inject flexibility into future technical and scientific developments in the crop sector;
6. Notes that the continuing loss of specific plant protection products for minor uses is having a very significant impact on the quality and yields of fruit and vegetables and is jeopardising the production of some speciality crops; stresses the need to find both short- and long-term solutions as regards the cultivation of these crops;
7. Notes that it can take on average 10 years to develop a new variety of wheat, rape or any other crop, and that it is therefore important to develop and use new plant-breeding techniques which respond to societal and agricultural demands and to be open to the technologies available in order to meet those needs and enhance the competitiveness of the agriculture and horticulture sectors; expresses concern at the Commission's delay in assessing new breeding techniques, and calls on the Commission, as a matter of urgency, to clarify their regulatory status;
8. Calls on the Commission to use the Horizon 2020 Framework Programme for Research and Innovation to fund applied research that supports the development of new, innovative planting-breeding techniques such as accelerated breeding;
9. Notes the estimates put forward by the FAO that the diversity of cultivated crops declined by 75 % during the 20th century and that a third of today's diversity could disappear by 2050; stresses that, in order to ensure long-term food security for a growing world population and resilience in food production systems, it is of crucial importance that we protect and preserve European biological and genetic diversity; believes that it is vital, therefore, to preserve the vast majority of local and regional varieties in situ and on-farm, in order to maintain and increase genetic and cultural diversity both within strains and breeds and in terms of their absolute number;
10. Stresses that, to make it possible to develop new varieties, it is vital to have many genetic variations available; believes, therefore, that the rapid decline is cause for serious concern;
11. Welcomes both the development of partnerships between government, industry and research organisations, for example in the area of participatory breeding, aimed at stimulating research in pre-breeding and breeding, and the characterisation and maintenance of genetic resources; draws attention to the benefits of strengthening and extending such partnerships as well as transnational initiatives in this field, and stresses the need to ensure that support schemes are structured in a way that maximises the impact and coherence of investments overall;

12. Believes that it is vital, with a view to Europe's future, to work seriously to preserve our genetic heritage, and that it is particularly important to cultivate and preserve local and regional varieties in order to conserve both genetic and cultural diversity;
13. Notes that, in an attempt to preserve and maintain genetic variety in agriculture and plant-breeding, collections of seed and plant material are being gathered at various gene banks around the world; notes in particular that there is a gene bank on Svalbard containing genetic material from all over the world, and stresses the fact that this is a very important and ambitious project aimed at safeguarding genetic diversity for the future;
14. Believes that it is important to preserve the vast majority of varieties and plant genetic resources in situ and on-farm; draws attention to the fact that public institutions are currently not making enough effort or providing enough support to facilitate this goal;
15. Stresses that this and other similar projects are vital to the future of plant breeding, agricultural production and the food supply;
16. Underlines the fact that plant-breeding research and practice is key to the future of agricultural production, in particular work on the development of existing and new varieties, with a view to safeguarding future food supply;
17. Acknowledges the importance of guaranteeing access to genetic resources as the basis for plant breeding; upholds in particular the fundamental principle of the international system of plant breeders' rights enshrined in the UPOV Convention, and stresses that the use of a protected variety for further breeding and the exploitation of a newly bred variety cannot be prevented by the holders of such rights; notes that this fundamental principle is also recognised in Article 13.2(d)(ii) of the FAO International Treaty on Plant Genetic Resources for Food and Agriculture;
18. Understands that it is both costly and time-consuming to develop new improved varieties, but stresses that this is needed in order to maintain Europe's competitiveness in this area; suggests that such costs could be compensated for by extending the length of plant variety protection rights after a proper impact assessment;
19. Expresses its concern at the fact that the global plant-breeding market is dominated by just a few large multinational undertakings that invest in only a limited number of varieties, while in Europe the plant-breeding market remains more diversified in comparison with the situation globally, with small and medium-sized enterprises accounting for a substantial part of the sector; stresses that the European plant-breeding market must be further improved in the interest of healthy competition;
20. Believes that large global plant-breeding undertakings have acquired a worrying degree of influence over global agriculture and agricultural policy; emphasises the role of publicly-funded independent scientific research carried out in the long-term public interest as regards long-term food security;
21. Believes that the EU seed marketing directives have provided a framework for maintaining the competitiveness of SMEs and securing a level playing field for all operators, and have stimulated plant-breeding innovation;

22. Believes furthermore that the larger undertakings should better exploit and share their plant-breeding techniques, which, if used correctly, could help to solve problems relating to the environment, the climate and the food supply;
23. Notes the fact that SMEs have an important role to play in the seed market and plant-breeding sector in the EU, in view of their significant contribution to commercial plant breeding, and draws attention to their ability to turn research and knowledge into new commercial products; as plant breeding becomes an increasingly research-intensive and high-tech sector, however, draws attention to the fact that the cost and tools required to develop and then market a new variety could constitute a barrier to smaller companies; believes that an adequate length of protection of their plant variety rights and full access to research results could contribute significantly to levelling the playing field, and stresses that it is of vital importance that investment in these companies in the EU be maintained going forward;
24. Stresses that it is important for Europe to win back and further develop European plant-breeding research and practice;
25. Stresses the importance of diversity of species in Europe, and of European plant-breeding research that focuses on European needs, including plants, cereals and fruits which are appropriate for local and regional conditions; notes that any developments in this area will help European farmers improve the quantity and quality of their food and feed production;
26. Stresses that Europe needs a range of diverse actors in the plant-breeding sector and that it should become possible for more undertakings and research centres to carry out research projects and to operate in the plant-breeding sector;
27. Believes that plant-breeding research, if it is to continue, requires long-term financial support, and that it is untenable to grant financial support to a plant-breeding research project for only a relatively short period, as it takes on average 10 years to develop a new variety;
28. Stresses that the EU, under the Common Agricultural Policy, has a duty to shoulder its responsibility to meet future challenges in the area of agriculture and plant-breeding in Europe; believes that the EU should play a leading role in the development of sustainable plant-breeding techniques and in promoting agricultural and plant-breeding research and practice;
29. Stresses that fundamental plant-breeding research in the EU should be funded by the EU and its Member States; does not believe it possible for small and medium-sized plant-breeding undertakings in the EU to fund much of the research themselves and at the same time be competitive;
30. Calls on the Commission to allocate financial resources to and create a coherent structure for plant-breeding research and practice within research programmes and other suitable policy instruments, so that European diversity can be preserved and developed; believes it important, in particular, that research projects be given enough time and funding to achieve results; stresses that it is also very important that plant-breeding undertakings have unrestricted access to research results, and that there should be a range of different research projects, so that failure would have a lesser impact;

31. Underlines the fact that there will be a continuous need for highly skilled workers to meet future demands in plant-breeding research, and that plant science and plant breeding should be further promoted in schools, universities and among the general public; points in particular to the success of the 'Fascination of Plants Day' on 18 May;
32. Stresses that the ultimate aim of legislation on plant-breeding should be to facilitate both the application of plant-breeding techniques and research into agriculture and plant-breeding; believes that it should result in products being better adapted to the local climate and geographical conditions, which would ultimately lead to large yields that are safe for people's health and the environment;
33. Notes that, with today's technique-based plant-breeding legislation, it has proven difficult, after the event, to define what technique was used at the time of plant-breeding, which serves to confirm the difficulties posed by technique-based laws;
34. Calls on the Commission, in view of the challenges and the current state of the European and global plant-breeding sector, as described above, to examine and analyse the situation carefully and to propose effective and practical measures in order to meet the enormous challenges facing Europe's breeders and farmers;
35. Encourages the Commission to elaborate an overall strategy on agricultural inputs, especially in relation to plant breeding; urges the Commission to provide a policy framework that supports the agricultural input sector as one of the key areas for the development of agricultural productivity and sustainability;
36. Instructs its President to forward this resolution to the Council and the Commission.

RESULT OF FINAL VOTE IN COMMITTEE

Date adopted	21.1.2014
Result of final vote	+: 25 -: 4 0: 3
Members present for the final vote	John Stuart Agnew, Eric Andrieu, Liam Aylward, José Bové, Luis Manuel Capoulas Santos, Michel Dantin, Albert Deß, Diane Dodds, Herbert Dorfmann, Hynek Fajmon, Iratxe García Pérez, Julie Girling, Martin Häusling, Esther Herranz García, Peter Jahr, Elisabeth Jeggle, Elisabeth Köstinger, George Lyon, Gabriel Mato Adrover, Mairead McGuinness, James Nicholson, Marit Paulsen, Britta Reimers, Giancarlo Scottà, Czesław Adam Siekierski, Alyn Smith, Ewald Stadler, Janusz Wojciechowski
Substitute(s) present for the final vote	Luis Paulo Alves, Pilar Ayuso, Esther de Lange, Christa Klafß, Anthea McIntyre, Petri Sarvamaa
Substitute(s) under Rule 187(2) present for the final vote	Adam Gierek