Report

European Plant Science Organisation
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Workshop on Plants for Human Health
European Parliament – Plant ETP

Brussels, 15.6.2018

Marc Cornelissen, the co-host of the workshop, welcomed the participants and summarized the workshop aim as bringing together policymakers and stakeholders - plant scientists, breeders and farmers – to discuss how they could jointly contribute to providing the European food supply chain with more nutritious plants and plant-based products that contribute to human health. The workshop took place in the European Parliament on 23rd May 2018 and was attended by members of the European Parliament, representatives of the European Commission and the Member States as well as public researchers, breeding industry representatives and farmers.

Mr. Cornelissen, chair of the Plant ETP Board, continued by providing a perspective on the challenges we are facing by explaining that the value chain - *from lab-bench to fork* - suffers from a lack of mutual understanding that consumers and scientists work on very different time scales. Consumer demands may be immediate, but it often takes 15 to 20 years to move a product from the research or breeding stage to the market. He then concluded that problems may be overcome if communication could be improved and that the intention of the workshop was to do just that, by providing different stakeholders the opportunity to give a presentation on the same topic: Plants for Human Health.

Julie Girling, the co-hosting Member of the European Parliament, welcomed speakers and participants to the workshop. She has a long-standing interest in health issues related to food and explained that governments have the responsibility to inform citizens about the importance of healthy diets, as exemplified by sayings such as "one apple a day keeps the doctor away" or "five [fruits and vegetables] a day". Mrs. Girling concluded that the effect of such campaigns had very limited effects on the choices consumers make. Therefore, the fruits and vegetables that consumers do eat need to be packed with nutrition. Given the right basic conditions, plant science and breeding can help farmers produce such products.

Barend Verachtert was the first invited speaker as Head of the Agri-Food Chain Unit in the Research and Innovation Directorate-General (DG RTD) of the European Commission. The European Commission has recognized the global challenges, such as climate change, loss of biodiversity and emerging health issues related to both, obesity and malnutrition. Mr. Verachtert explained that these challenges put joint pressure on the food supply chain and that the EC has reacted by launching the FOOD

2030 initiative. The next Framework Programme for Research and Innovation, Horizon Europe (FP9), will strengthen the connections between the different components of the food system including this initiative, and will have earmarked funds (proposed are 10 billion €) for research and innovation dedicated to the "Food and natural resources" challenge encompassing the whole value chain from research and primary production to consumer benefits. 'Consumers want fresh. local, trusted and nutritious food' he stated. The intention of this programme is also to tackle the environmental challenges associated with food production, as well as constraints on the food system from climate change and loss in biodiversity, in continuity with previous framework programmes.

The second invited speaker was Professor Cathie Martin from the John Innes Centre in Norwich, UK**.** In her work Prof. Martin is interested in biofortification using modern breeding technologies. Using the words: *'Food is health care, medicine is sick care!',* Cathie explained how plant breeding can help consumers eat a healthier diet. Examples of the vitamin-enriched super broccoli Beneforte, as well as anthocyanin-enriched purple tomatoes produced in her own lab, were given. Prof. Martin has demonstrated that mice fed with a diet containing purple tomatoes are protected from developing cancer and argued that two purple tomatoes a day could be sufficient to bring the same benefits to humans. She concluded her talk by stating that we need to diversify our diets to eat more phytopigments and that scientists, breeders, and farmers need to collaborate to bring these healthy products to the market, as proposed by the European Plant Science Organisation (EPSO) in its mission idea '1001 crops – diverse crops for diverse diets and human health and resilient production'.

Dr. Andreas Sewing, Head of Research and Development of the Vegetable Seeds unit at Bayer Crop Science, the next speaker, gave a picture of what the seed industry could do to deliver healthy products to the consumers *e.g.* products that make it convenient for consumers to eat a healthy diet, such as mini-vegetables and fruits - baby carrots in snack-bags and small grapefruit-sized water-melons. He introduced the term nutraceuticals which means biologically active phytochemicals that possess health benefits, and that may be delivered to the consumers as functional-food. Dr. Sewing then explained how Public-Private-Partnerships could help to bridge the gap between research and innovation to provide farmers with improved seed material with beneficial health profiles.

The last invited speaker was Michael Hambly, Vice Chair of Copa-Cogeca's Cereals Working Party and as cereal farmer part of the value chain. In his talk he stated that farmers as producers are dedicated to increasing production while reducing the environmental impact of farming, to reach economic-, environmental-, and societal sustainability. However, farmers rely on technology development for plant protection and improved seeds. Today, the restricted number of available plant protection products is becoming a problem for sustainable production. The concept of Risk vs. Hazard in relation to plant protection products, therefore, need to be clarified for policymakers and consumers. In addition, breeding for resistant varieties with conventional breeding takes too long and it is vital that the New Breeding Technologies (NBTs) are exempted from additional regulation. Mr. Hambly further explained that while modern precision farming may help to reduce nutrient leakage it could also be used to deliver micro-nutrients to the plants.

A discussion followed and brought out the following points

- Steward Agnew, MEP: Not only scientists, farmers and companies need to engage with the public to discuss the beneficial contributions from plant science and innovation for human nutrition and health

- Barend Verachtert & Annette Schneegans, European Commission: The EC foresees a broad consultation towards the FP9 strategic research and innovation plan
- Karin Metzlaff, EPSO: The proposed mission idea '1001 crops - diverse crops for diverse diets and human health and resilient production' aims to join efforts of scientists, farmers, companies in breeding, processing and retailing, with retailers and consumers. It would combine the advantages from crop improvement and agronomic practices. She sees a first start in the mindset of decision makers from only curing diseases towards preventing diseases as well, looking for instance at the FP9 (budget) proposal for the 'Food and natural resources' challenge. Mrs. Metzlaff welcomed former remarks of other discussants that the agricultural policy should not only consider environmental benefits, but equally support the contributions to food and nutritional security.

The workshop was concluded by Marc Cornelissen, who thanked all contributing speakers and made the following summary: Plants are part of a healthy diet. Within the next 30 years, the food system needs to be transformed to be more resilient and to produce healthier food. Scientists, farmers and the seed industry need to work together with policymakers and consumer organizations to reach public acceptance of new products and technologies. Sufficient public research funds need to be allocated to basic science and the testing of innovations.

Now the science, companies and farmer representatives will continue their collaboration with MEPs and representatives of the EC and the Member States to include the potential contributions from the plant sector to address plants for human health - for food and nutritional security, in respective European and national policies, strategies and programmes. Cathie Martin and Monika Schreiner (IGZ / DE) will start the EPSO 'Nutritional Security' Working Group.
Aldo Ceriotti (CNR / IT), Cathie Martin (JIC / UK), Karin Metzlaff (EPSO / Europe), Marina Predic (EPSO) / Europe), Jens Sundstrom (SLU / SE), Ingrid van der Meer (WUR / NL) and Angelo Volpi (CNR / IT) participated as experts from EPSO, the European Plant Science Organisation, in the workshop.

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Useful links

- EPSO: Submission to the EC consultation on EU research and innovation missions (FP9), 30.3.2018
- EPSO: Position on the next EU Framework Programme for Research and Innovation, FP9, 19.9.2017
- EPSO: Submission to the EC consultation "Modernising and simplifying the Common Agricultural Policy", 2.5.2017
- Workshop Press Release by Plant ETP: www.plantetp.org
- EPSO publications: www.epsoweb.org/archive-epso-publications-and-statements?981448774=1
- EPSO member institutes and universities: www.epsoweb.org/membership/members
- EPSO representatives: www.epsoweb.org/membership/representatives

About EPSO

EPSO, the European Plant Science Organisation, is an independent academic organisation that represents more than 200 research institutes, departments and universities from 30 countries, mainly from Europe, and 3.300 individuals Personal Members, representing over 26 000 people working in plant science. EPSO's mission is to improve the impact and visibility of plant science in Europe, to provide authoritative source of independent information on plant science including science advice to policy, and to promote training of plant scientists to meet the 21st century challenges in breeding, agriculture, horticulture, forestry, plant ecology and sectors related to plant science. www.epsoweb.org | EU Transparency Register Number 38511867304-09