



EPSO – your network to strengthen plant science in Europe

Joes Pio Beltran European Plant
Science Organisation

www.epsoweb.org

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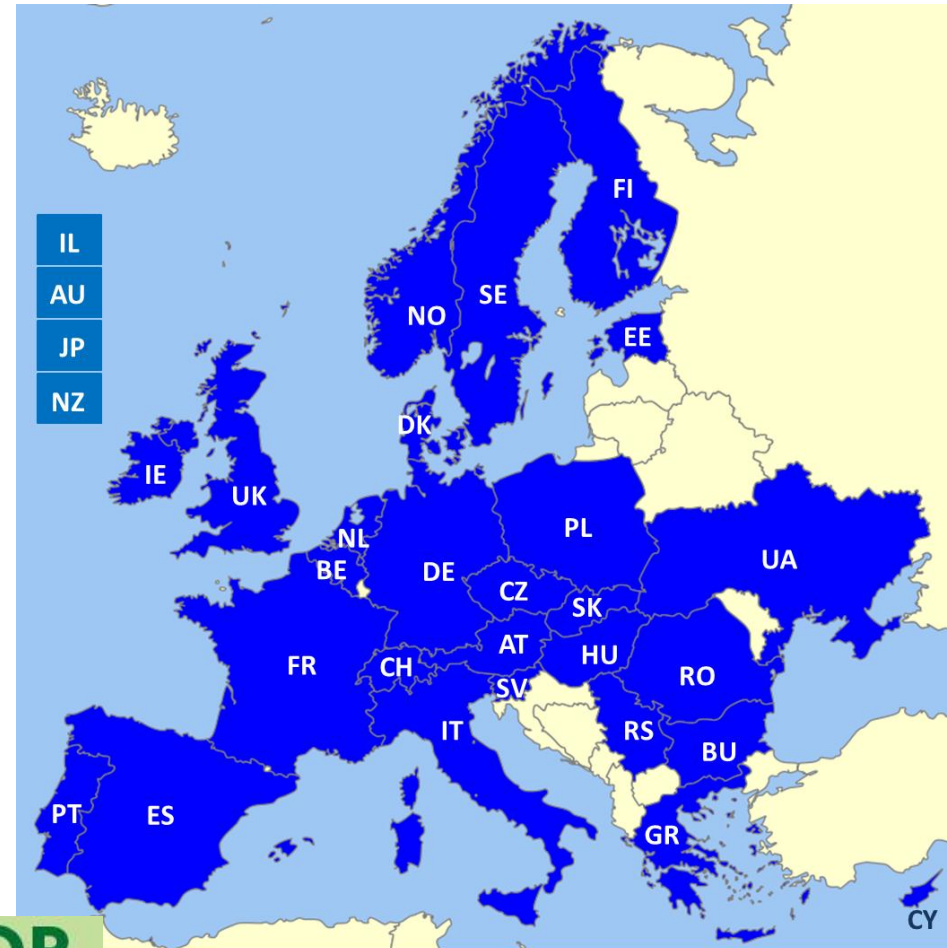
EPSO aims to advance plant science in Europe

**Independent academic
organisation**

**Academic Institutional
members:**

- > 220 institutes, universities
- > 28 000 researchers, staff
from 31 countries

+ around 3 000 Personal
members **+ you !**



**CREATING A FUTURE FOR
PLANT RESEARCH IN EUROPE**



EPSO partners:

NGOs, industry, science organisations

Observers are from industry, NGOs, [linked to ministries](#)

- ELO (European Landowners' Organization)
- EuropaBio, Bayer, BASF, BIOGEMMA, DLF Trifolium, Dow AgroScience, Keygene, KWS, SunGene, Syngenta, Strube-Dieckmann, Agritec Plant Research, AgriSera, SES VanDer Have N.V, FoodDrinkEurope
- German Society for International Cooperation ([GIZ](#))

Links with academic and governmental organisations:

- [ISE](#), ELSF & their members; EUCARPIA, ISHS, FESPB
- [Global Plant Council](#) (Plant science organisations worldwide)
- National learned societies collaborate with EPSO on policy issues (10: from DE, 2xUK, CZ, Scand, FR, 2xPL, ES, PT)
- COST, [ERA-CAPS](#), Joint Programming FACCE (D&H, W)
- [FAO](#) (Division plant production and protection)

EPSO @ work: addressing grand challenges

Advice on science policy from national to European levels

Achievements:

- **Research opportunities for the plant sector in FP6 & FP7**
- Links with ERA-Net Plant Genomics / CAPS and Plant KBBE
- Major stakeholder of the Technology Platform “Plants for the Future”
- Foster creation of and encourage proposals to European Research Council (via ELSF and ISE)
- Coordinated strategic bioeconomy project of 9 ETPs – white paper
- Founding member of Global Plant Council

Now:

Addressing grand challenges like food – water – energy security, sustainable agriculture

- Input to **Horizon 2020**, Joint Programming, **Eur. Innov. Partnership**, **Global collaborations (GPC, FAO)**, research infrastructure, CAP, education
- Several working groups develop new science activities and policy papers



EPSO ongoing work in Plant ETP

Science policy – Input to the H2020 Work Programmes



1-Resource use efficiency and stewardship

Objectives

- Optimised resource use efficiency in agricultural systems
- Enhanced use and productivity of marginal lands and degraded land
- Reduced environmental footprint of agriculture (GHGs, energy consumption, soil health)
- Analyse biodiversity and improve its use in agriculture
- Conserve and enable use of wider plant genetic diversity

Possible solutions:

- ❖ Breeding for root traits, for **Was recommended for WP 2014/15**
- ❖ Legumes for sustainable effective biological nitrogen input
- ❖ Nutrients: close loops, availability in dynamic environments
- ❖ Soil biological processes; Yields on marginal lands
- ❖ Perennial and novel crops; Use potential of plant genetic resources



G. Neumann

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Science policy – Input to the H2020 Work Programmes

2016/17



2-Resilient plants – improving yield and yield-stability in dynamic environments

Objectives

- Matching environments and genotypes: understand ecological, physiological and genetic requirements
- Diversified plant production: more plants with higher potential
- Understanding management and integrated plant production (agric. & horticulture) in different regions of Europe

Possible solutions:

- ❖ Use of crop germplasm and
- ❖ Use of biodiversity and prec
- ❖ Management options

Theme recommended for WP 2016/17:

Crops tolerant to abiotic stress –
species t.b. defined by farmers

Forest genetics for tree improvement



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2016/17



3-More nutritious plants for healthy food & feed

Objectives

- Developing and produce sufficient, nutritious and affordable plant raw material for food products
- ... and for feed
- Tailoring plant raw materials for specific health benefits
- Reducing or eliminating potentially harmful compounds to improve safety of food and feed

Possible solutions:

- ❖ Improve food nutritional quality
- ❖ Biofortification to prevent deficiency
- ❖ Determine bioavailability & absorption
- ❖ Develop safe and sustainable food products
- ❖ Investigate the role of feed & animal nutrition on food quality and safety



Theme recommended for WP 2016/17:
Plants for human nutrition and health

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Science policy – Input to the H2020 Work Programmes

2016/17



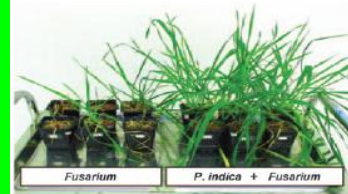
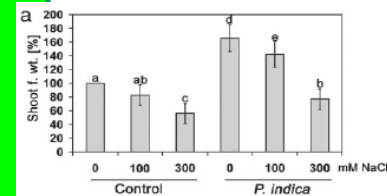
4-Resilient production – improved plant health

Objectives

- Improved tolerance and resistance of plants
- Characterising major plant pathogens, their biodiversity and natural antagonists
- Biologicals and chemicals for plant protection
- Improved methods and management of farming and production systems

Possible solutions:

- ❖ Crop and wild plant genes contributing to pathogen / pest resistance, incl. gene silencing
- ❖ Optimal defense; symbiotic control ..
- ❖ Genetic basis of pest / pathogen biodiversity



Theme recommended for WP 2016/17:
Addressing emerging and increasing risks in plant health in Europe



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2016/17

5-Improved plants for non-food products

Objectives

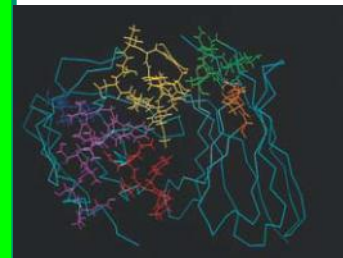
- Improved yield, composition, processability of non-food and multi-use crops
- Develop photosynthetic systems for the sustainably production of bioenergy
- Optimise plant-based platforms for commercial recombinant protein production
- Develop plants cells for production of high value molecules

Possible solutions: improve

- ❖ Biomass yield / composition
- ❖ Yield and tailor quality of oils
- ❖ Yield and functionality of rec
- ❖ Plant / cell cultures for plant bioactive compounds, drugs, specialty chemicals
- ❖ Efficient / env. friendly pre-treatments for multi-use crops

Theme recommended for WP 2016/17:

Green bioactive molecules (Small green molecules and green proteins)



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6-Horizontal actions

Objectives

- Integrated programs linking nations, sectors and disciplines
- Integrated technology platforms and networks
- Focus on human resources
- Strengthening European competitiveness
- European solutions in a global world
- Open dialogue with all stakeholders

Possible solutions: improve

- ❖ Integrated projects, omics platforms; Experimental farms
- ❖ Agriculture in cyclical sustain
- ❖ Integrated Eur. resource cen
- ❖ Revive extension services, k
- ❖ and basic), farmers and companies
- ❖ Projects with developing countries and globally (GPC)
- ❖ European forum on sustainable bioeconomy



Theme recommended for WP 2016/17:

Outreach to policy (EP) and society (FoPD)

Engage in global actions (GPC)



EPSO ongoing work in EIP

Science policy – EPSO in EIP Agricultural Product. & Sust. Steering Board

European Innovation Partnership

‘Agricultural Productivity and Sustainability’ (for 2014 – 2020)

Lead: EC DGs AGRI and RTD

EPSO in High-Level Steering Board & Sherpa Group

1-Strategic Implementation Plan (drafting – ‘Productivity and Sustainability’, modern and traditional technologies & goals;
Examples incl. High value products; Plants-food-health; PMP ...)

2- Focus Groups

3- Operational Groups

Form your OGs – use the EPSO EIP Briefing



EPSO support to science

EPSO Working Groups

- Outreach and **Public** Dialogue (FoPD)
- Towards Innovation Driven **Agriculture** (Concept)
- Plant Research for **Biorefineries** (EU; India)
- **Crops, Food and Health**
(White paper, Horizon 2020, D&H JPI)
- Opportunities Beyond Present **Crops** (Paper)
- Agricultural **Technologies** (Statements)
- **Global** Plant Research including Developing Countries (EPSO-FAO workshop 2012;
9 Focus areas GPC)
- **Environment** (FP7, Horizon 2020)
- **Molecular Farming**
- **Education** (Education Action Plan - with Plant ETP)
- **Horticulture** (Horizon 2020 & national; workshop)
- **Basic Plant Science** (Eur. and national advise)



Organise events on the FoPD 2015

EPSO initiated & coordinates the 'Fascination of Plants Day'

Over 1.000 events in 54 countries in 2013 → join in 2015 ☺



Fascination of
Plants Day

May 2015

Enter ➡

Plant Science . Agriculture, Horticulture & Forestry .
Plant Breeding . Plant Protection . Sunlight into Sugars .
Food & Nutrition . Environmental Conservation .
Climate Change Mitigation . Smart Bioproducts .
Biodiversity . Sustainability . Renewable Resources .
Education & Artivation

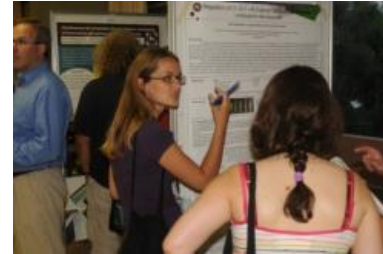


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EPSO – more opportunities for plant scientists

Join in and get involved:

- Join a Working Group
- Shape and join our Conferences and workshops
- Contribute to the Newsletter, website, social media
- Send us input to the H2020, submit proposals
- Organise events for the FoPD 2015 around 18.5.2015



This is our future
we have to engage in it



**We look forward to work with you
in the coming years!**

Thank you for your attention

**www.epsoweb.org
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EPSO ongoing work in Plant ETP

Science policy – Input to the H2020 Work Programmes

2016/17

From 3 More nutritious plants for healthy food & feed



Potential Focus Area we recommend (beyond SC2):

- Sustainable growth: Unlocking the potential of living organisms

Potential theme we recommend from our challenge 3:

- ❖ Plants for human nutrition and health

Potential ideas for this theme we recommend:

- Provide tailored plant raw materials for specific health benefits (R&I)
- Develop and use model foods for phytochemical active compounds to reduce the risk of chronic diseases (R&I)
- Improve cross-sectorial approach to nutritious food as driver for food security (CSA)

