



Announcement

European Plant Science Organisation
www.epsoweb.org

Re-launch EPSO Plant Factories Working Group Enroll WG members and confirm joining the 6th March 2025 online meeting

Brussels, 29.01.2025

EPSO has the pleasure of announcing the re-launch of the original Molecular Farming Working Group with a larger scope now as the Plant Factories WG.

We invite **EPSO member organisations to confirm their 1-3 experts for this WG**. Please check on the [WG website](#) which experts are in the WG already. To enrol up to three experts, please email to Karin M and cc the chairs and provide for each one the name, function in the institute / university, 1-3 keywords on the expertise and contact details. Pls confirm as well if the expert(s) will **join the 1st meeting online 6.3.2025 9-13 CET, best by 25 February**.

Introduction:

Plants as source of natural products, enzymes and genes

Plant kingdom provides us with an immense variety of metabolites that play crucial roles in the survival, growth, communication and defence mechanisms of plants. The diversity of these metabolites arises from the intricate biochemical pathways that plants have evolved over millions of years. Their (secondary) metabolites serve as powerful tools for plant defence, deterring herbivores, pathogens and competing plants, but also to adapt to their surroundings and environment and to interact with diverse organisms in their environment. This wealth of metabolites serves not only the plants themselves in terms of survival and growth but also offers invaluable resources for human applications in medicine, agriculture, and industry.

Production platforms for plant natural products, recombinant proteins and peptides

Plant molecules may be made available (at scale) via microbial or other existing industrial production platforms (green-white biotechnology). Some high value flavours produced this way are already on the market, however there is much more potential for new plant derived product for other (lower) value applications. Alternatively, these plant natural products may be produced via biocatalysis using plant enzymes and via plant production systems. Plants can not only be used to produce plant natural products but also as host system for the production of recombinant proteins and peptides. In contrast to microbes and animal cell-based systems plants offer a larger variety of approaches ranging from plant suspension cultures produced in classical bioreactors, transient expression in whole plants and plant cells, towards stable transformed plants accumulating the product in vegetative tissue, or storage organs. This provides possibilities to select the suitable plant production host or a microbial system that specifically meets the requirements of the product which can be from the pharmaceutical, cosmetics, or food related.

The availability of genome editing tools for easier and more precise introduction of transgenes provides further opportunities for all kinds of **Plant Factories**.

Scope of the WG

Building a hub of institutions and scientists working on all aspects of bringing **Plant Factories** into application, from basic research on metabolic pathways towards genetic manipulation to optimize product yields and quality and finally to the development and implementation of up-stream and downstream processes to manufacture different products ranging from plant secondary metabolite to recombinant proteins for applications such as food and food ingredients, natural colorants, flavours, cosmetics, medicines, natural agrochemicals or even building blocks for bioplastics or other materials applications.

Even though there is a lot of research, know-how and technology, plant based systems are usually not in the focus when it comes to biotechnological production processes for various reasons. One mission of the group will be to elevate the critical mass, illustrate the potential of **Plant Factories** and improve visibility among policy makers and industry by active networking and stakeholder interactions

We look forward to meeting you 6th March

Holger Spiegel, Johannes Buyel, Heiko Rischer, Dirk Bosch, Katarina Cankar (WG chairs) and Karin Metzloff (EPSO)

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Links <https://epsoweb.org>
EPSO Plant Factories Working Group: <https://epsoweb.org/working-groups/molecular-farming/>

About EPSO EPSO, the European Plant Science Organisation, is an independent academic organisation that represents around 200 research institutes, departments and universities from 31 countries, mainly from Europe, and 2.700 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. <https://epsoweb.org> | EU Transparency Register Number 38511867304-09.