

# Hort Forum

## Plant biostimulants: (how) do they work?

Thursday  
27<sup>th</sup> of March 2025,  
Hours: 17:00 – 19:00  
*Central European Time (CET)*

### Registration link:

[https://us02web.zoom.us/webinar/register/WN\\_BEdz861nTvKHd80a4xISiw](https://us02web.zoom.us/webinar/register/WN_BEdz861nTvKHd80a4xISiw)

**ISHS**  
International Society for Horticultural Science



The International Society for Horticultural Science invites you to the seventh episode of Hort Forum:

## **Plant biostimulants: (how) do they work?**

**Speaker: Pr. Patrick du Jardin,**

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Gembloux Agro-Bio Tech,  
University of Liège, Belgium*

### **Abstract**

Plant biostimulants have been recognized as a new regulatory category of fertilizing products in different parts of the world, but their properties and uses still need to be clarified. A main reason is that their definition is based on claims of agricultural effects - which are increased nutrients use efficiency, improved tolerance to abiotic stress, enhanced product qualities and increased availability of soil nutrients, according to the new European regulation (EU) 2019/1009 – but how these claims are substantiated in practice is still unclear, fueling skepticism among growers. The EU approach consists in defining harmonized standards, bearing on agreed definitions, quality criteria and protocols for generating data on the efficacy of the products. Compliance of the data package provided by the companies to the adopted standards will be regarded as sufficient for validating the claims, as indicated by the 'CE-marking' of the products. In USA, a self-certification program promoted by the biostimulants industry aims at basing farmer confidence on validated protocols for efficacy testing as well.

Whatever the regulatory efforts and industry initiatives, confidence in the products will depend on the knowledge of the mechanisms of biostimulation, allowing a sound advice in products uses. Although many scientific articles on biostimulants have been published in peer-reviewed journals over the last twenty years, several bottlenecks can be identified in the understanding of biostimulation. For instance, many articles use single substances (which can be multicomponent), whilst most marketed products combine several biostimulant substances, sometimes added to micro-nutrients, making it difficult to assign the observed effects to individual constituents or to specific interactions between constituents. Also, biostimulants aim at interacting with life processes of plants, which respond to many

environmental factors and also depend on the genetic makeup of the variety. Furthermore, any plant is now regarded as a 'superorganism', or holobiont, associating plants and microorganisms, and many biostimulants will act via these complex associations.

I also argue that adoption of biostimulants not only depends on products efficacy but on how the grower will understand their potential added value in the context of the many challenges faced by agriculture. In this respect, biostimulants seem to offer a unique opportunity to bridge plant nutrition and plant health, emphasizing the need to extend 'plant care' to the strengthening of the plants' capacity to withstand adverse environments and to cope with the scarcity of nutrients and water resources, which are all challenges amplified by climate change.



### **Short Bio**

Patrick du Jardin (Pr. Dr. Ir.) is professor of Plant Biology at Gembloux Agro-Bio Tech, University of Liège, Belgium, since 1996, of which he was Dean of faculty in the period 2007-2009. He specialized in plant physiology and nutrition. Since 2011, he has been pioneering the concept of plant biostimulant by authoring review articles and book chapters on the topic, by advising Belgian and European regulatory authorities and by chairing international conferences. Patrick du Jardin has a long-standing experience in multidisciplinary work on agricultural technologies. He is currently (and till 2028) chairman of the Joint Ethics committee of the French public research institutes INRAE- Cirad – Ifremer – IRD and was vice-chair of the GMO experts panel of the European Food Safety Authority between 2012 and 2015. Patrick du Jardin dedicates his professional life to the production, use and sharing of knowledge and expertise on plant biology and biotechnology through scientific publications, teaching, international cooperation and conferences. He is also director of the Botanical Garden of the campus of Gembloux Agro-Bio Tech.

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## Panelists



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