European Biostimulants Industry Council

Plant Biostimulants in a European dimension

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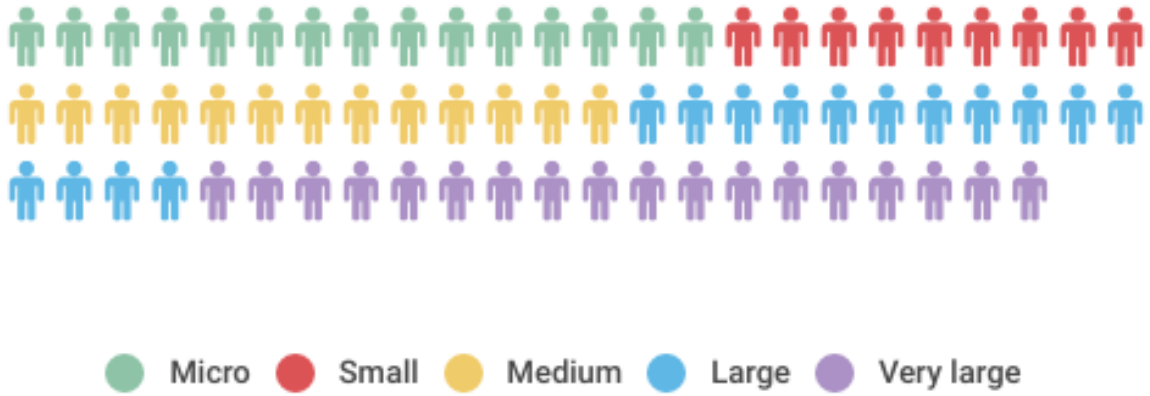
Who is EBIC – the European Biostimulants Industry Council?

EBIC is a trade association which provides a common voice for the plant biostimulant industry in Europe

70 member companies

Breakdown by size (based on global turnover and headcount)



As of January, 24 2024

…and still growing!

Full list of member companies here

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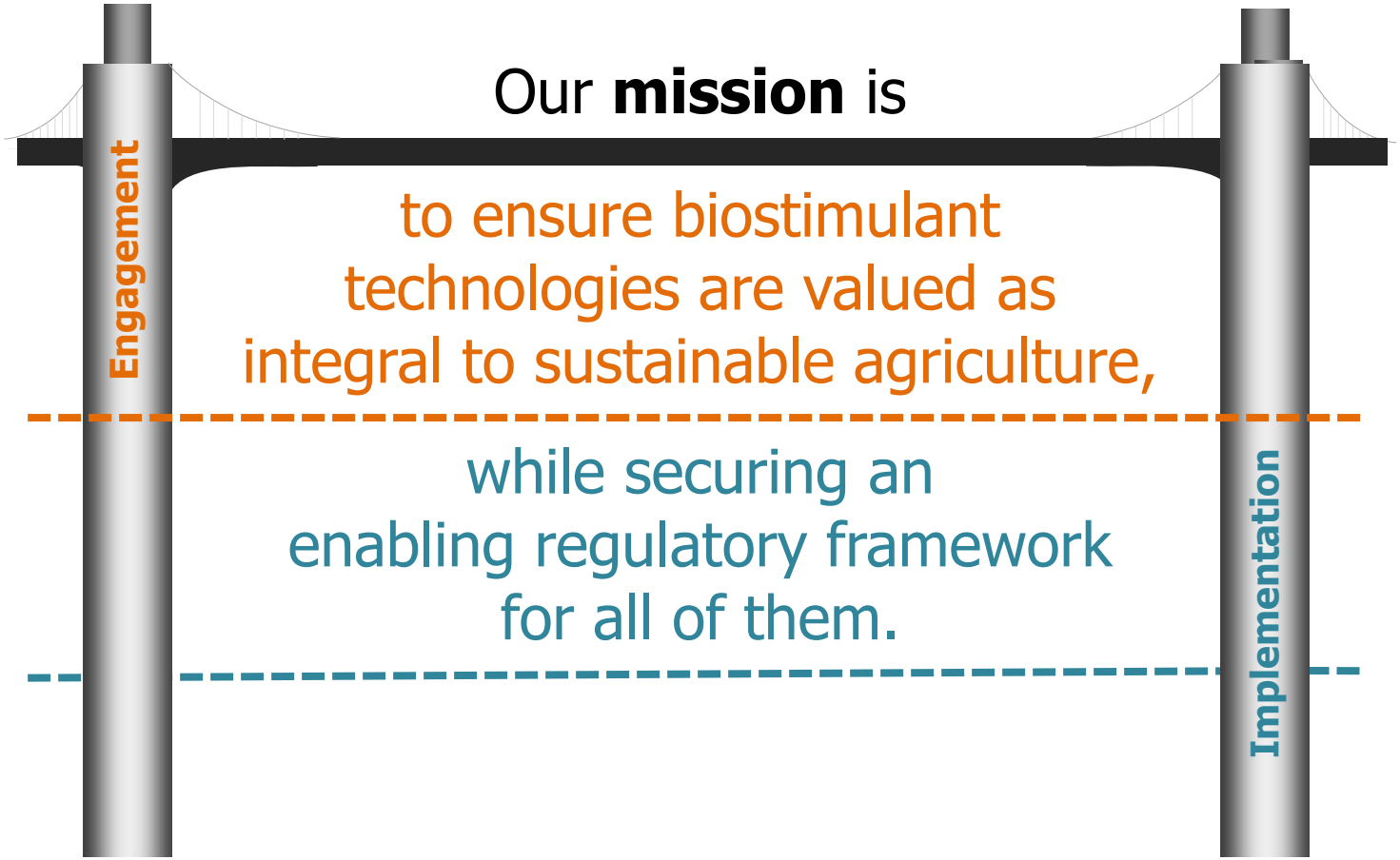
EBIC's mission

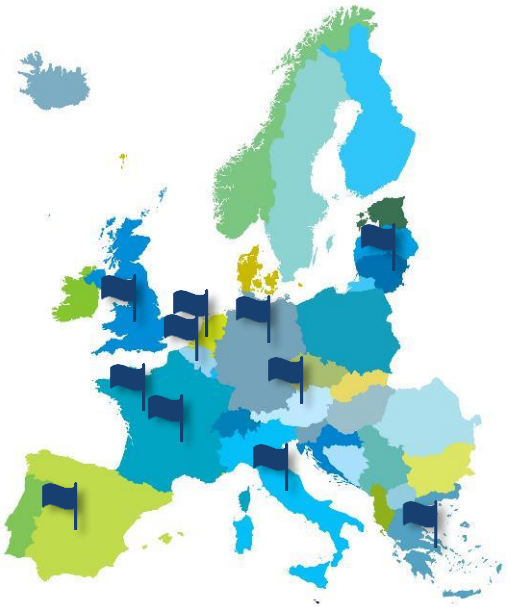


- Leveraging **soil health** to promote the role of PBs in **sustainable food systems**
- Promoting the role of PBs in mitigation and adaptation to **climate change**
- Promoting the contribution of PBs to **food quality and food security**
- Fostering PBs as a key enabling technology for a bio-based, **circular economy**

- Securing **innovation**-friendly framework conditions and market access for PBs

Strategic partnership with associations like Artemis

EBIC works closely with national associations like Artemis to build a strong network of advocates for plant biostimulants across Europe



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SPEL

unifa

AFAÏA ACTEURS D'UNE TERRE PLUS VERTE

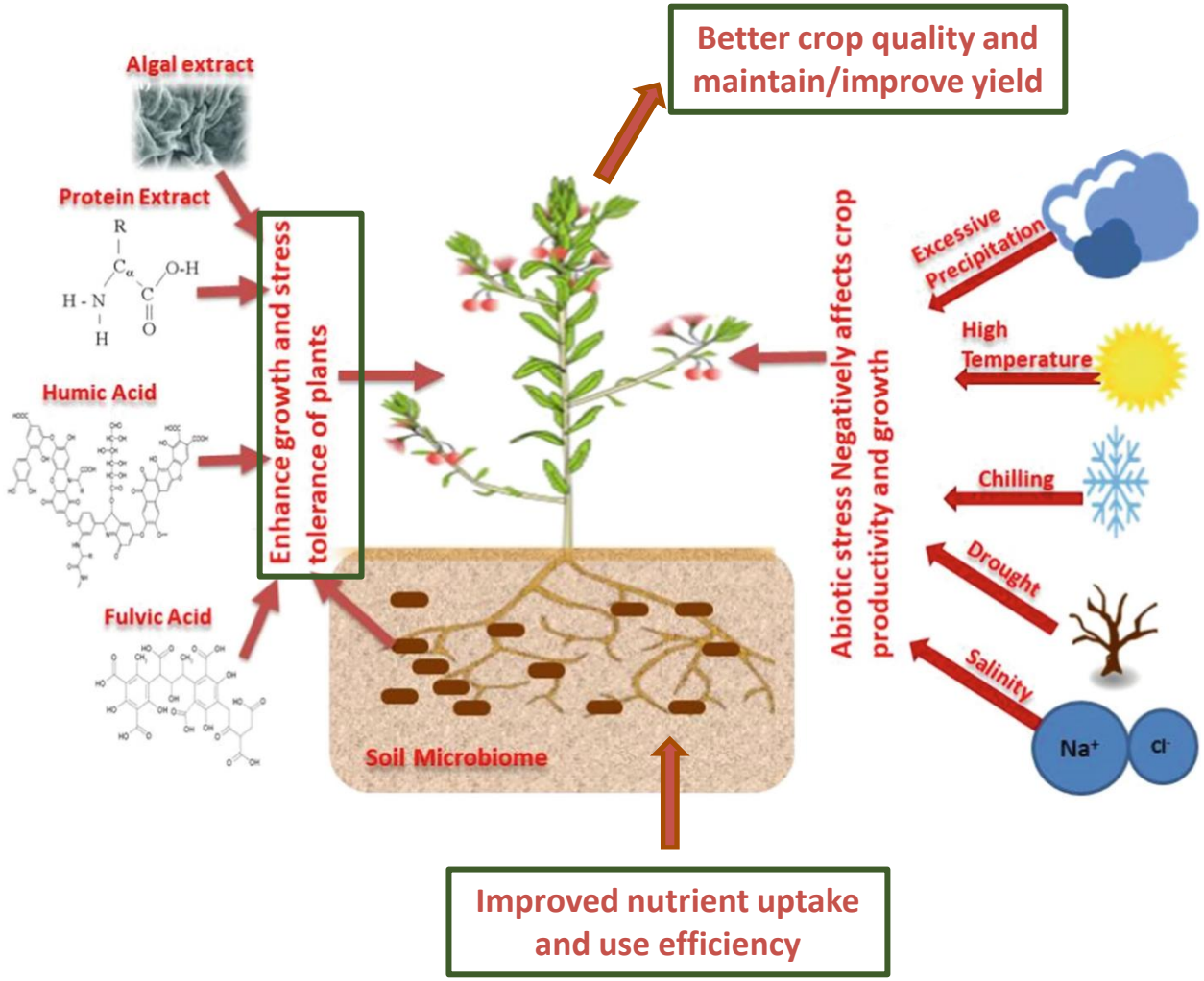
Artemis Natuurlijk

BELFertil

Industrieverband Agrar

CropLife DANMARK

What are plant biostimulants?



Source: Adapted from Pandey et al., 2022. https://doi.org/10.1007/978-981-16-7080-0_9

- Plant biostimulants are **defined by their function**, not by their composition
- Components of plant biostimulants can include seaweed and plant extracts, hydrolysed proteins, microorganisms, humic and fulvic acids, chemical substances, etc.
- Formulations are used following specific instructions to obtain a beneficial effect on a target crop

Legal definition of plant biostimulants in the EU

- 'An **EU fertilising product** [= fertilising product* which is CE-marked when made available on the EU market],
- the **function** of which is to **stimulate plant nutrition processes** independently of the product's nutrient content,
- with the sole aim of **improving one or more of the following characteristics** of the plant or the plant rhizosphere:
  a) nutrient use efficiency,
  b) tolerance to abiotic stress,
  c) quality traits, or
  d) availability of confined nutrients in the soil or rhizosphere.'

Annex I, Part II, PFC 6,1. Regulation (EU) 2019/1009 (FPR)
http://data.europa.eu/eli/reg/2019/1009/oj [largely inspired by EBIC's definition]
** Art.2(1) FPR*

PFC 6 (A): Microbial plant biostimulant

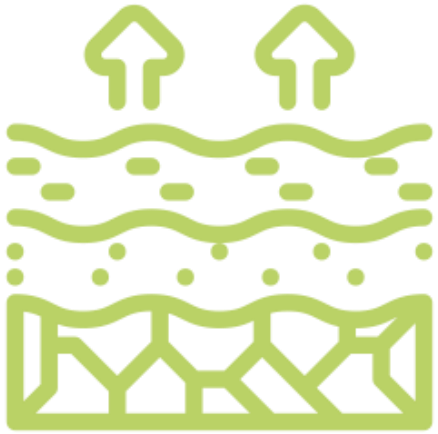
Microorganism or consortium of microorganisms referred to in CMC 7 (*Azotobacter* spp., mycorrhizal fungi, *Rhizobium* spp., *Azospirillum* spp.)

PFC 6 (B): Non-microbial plant biostimulant

Plant extracts, seaweed extracts, humic substances, chemical substances, amino acids, animal by-products, etc.

How do biostimulants contribute to nutrient uptake and use efficiency?

Biostimulants increase **nutrient use efficiency**



⇢ Biostimulants can prevent wasted nutrients, which is good both for the environment and farmers' pockets

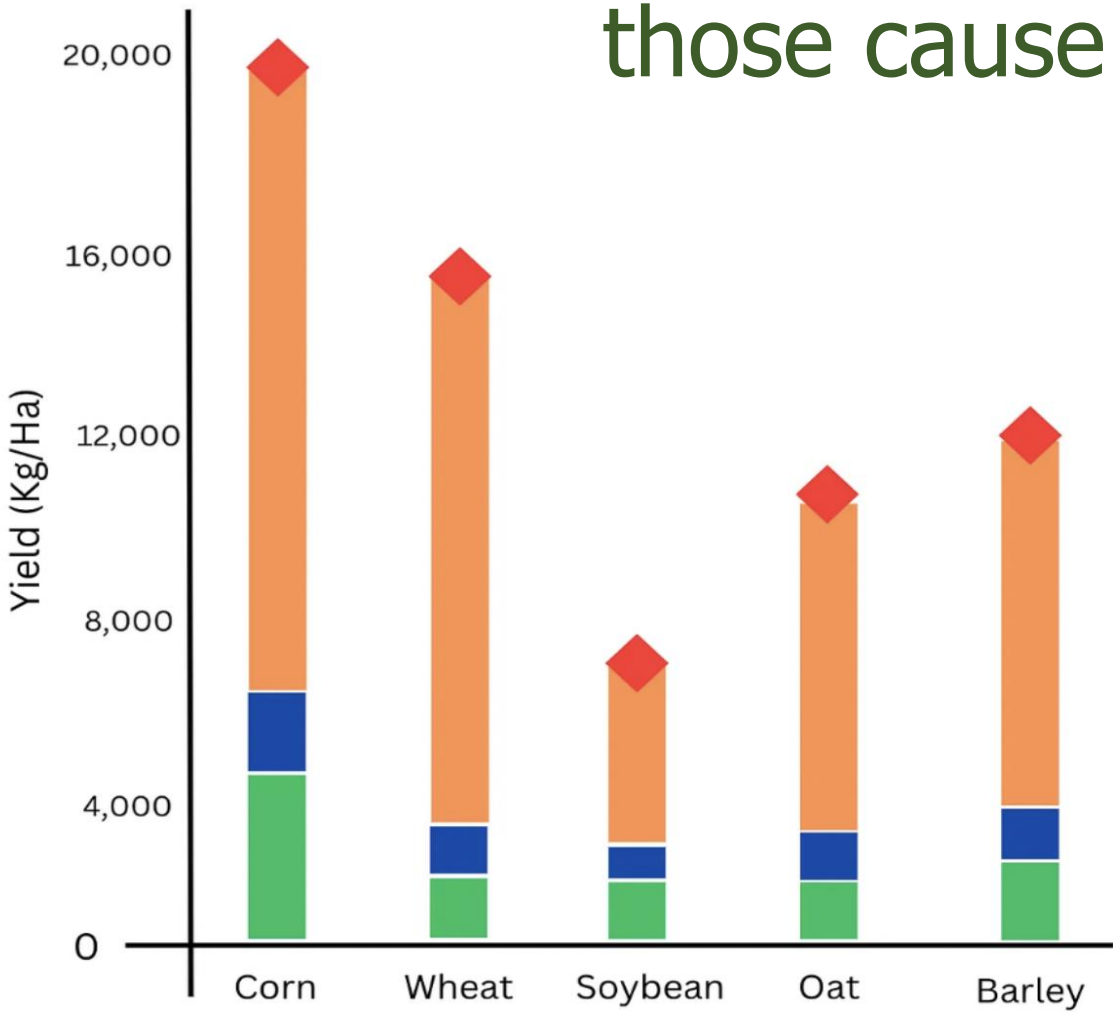
- Plants take up more applied nutrients, so **fewer are lost to the environment**
- Some biostimulants increase root growth, which **improves nutrient and water uptake**, helps **anchor soils** against erosion, and **increase soil carbon** if the roots are left in the ground at harvest
- Some biostimulants **solubilize nutrients** in the soil such as P and K into forms plants can absorb and other microbial biostimulants **fix N** from the air and share it with the plants they colonize
- Some biostimulants also influence **how nutrients move** inside plants and which plant processes can use them

Failed harvests = wasted nutrients

Source: Adobe Stock

How do biostimulants help plants tolerate abiotic stress?

Crop losses due to abiotic stresses dwarf those cause by pests and disease



- Record yield
- Losses caused by abiotic stress (extreme temperature, drought, lack of oxygen from water logging, salinity)
- Losses from biotic factors (insects, disease, etc.)
- Actual average yield

Source: Buchanan, Gruissem, Jones: Biochemistry and Molecular Biology of Plants, American Society of Plant Physiologists, 2000

Plant biostimulants mitigate stresses

- Biostimulants help plants **cope with abiotic stresses** like extreme temperatures, drought, water logging, salinity and others
- Biostimulants may help the plant **tolerate the stress** itself **and/or recover more quickly** when the period of stress is over
- Farmers benefit at a time when the climate is less predictable, and they need help **safeguarding yields against harsh growing conditions**

Most abiotic stresses are worsened by climate change

- Drought
- Extreme temperatures
- Salinity
- Excessive sunlight
- Wind
- Rainfall
- Flooding

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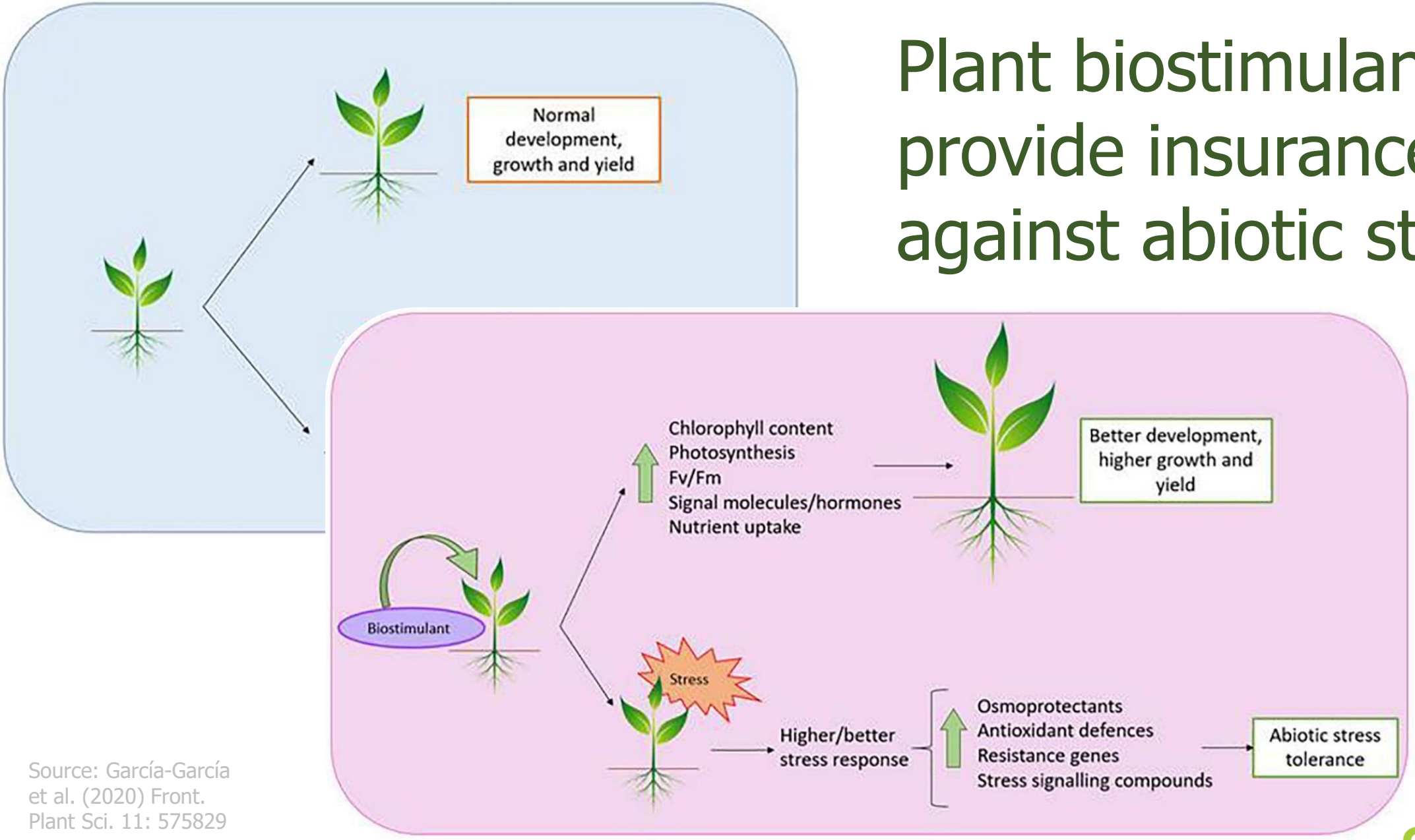
Plant biostimulants provide insurance against abiotic stress



Source: García-García et al. (2020) Front. Plant Sci. 11: 575829

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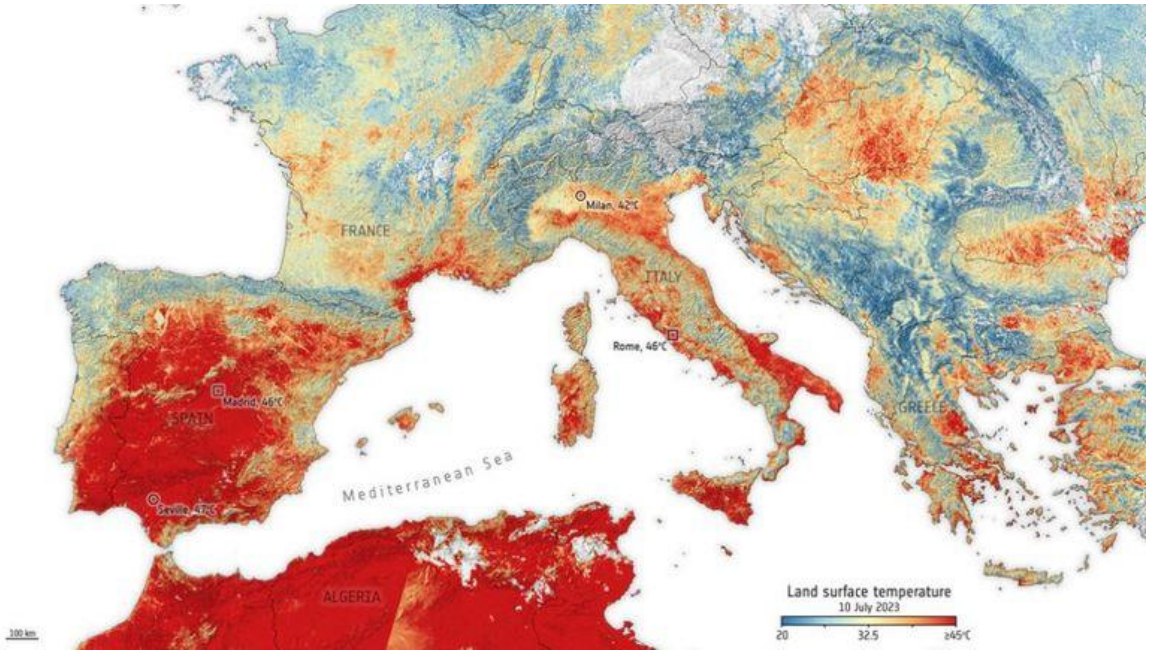
What are some ways that biostimulants help improve crop quality?

Biostimulants also play a role in protecting crop quality against the effects of abiotic stress

Stress type					Physiological response	Prevalent effect on crop quality
Drought	Heat	Salinity	Ozone	UV/light		
✓	✓	✓	✓	✓	Altered gene expression	Anti-oxidants, Protein
✓	✓	✓	✓	✓	Oxidative stress	
✓	✓	✓	✓	✓	Accelerated senescence	Minerals, Sugar
✓	✓	✓			Reduced water content	
✓		✓	✓		Altered mineral household	Feed value, Starch, P/S traits, Lipids, PUFA
✓	✓	✓	✓	✓	Reduced biomass	

Wang & Frei (2011) Agric. Ecosyst. Environ. 141(3-4): 271-286

Plant biostimulants can benefit all aspects of soil health, critical for food system resilience



Record soil temperatures during heatwave in July 2023

- PBs can positively influence the **chemical composition of soils around plant roots**
- PBs can **improve soil structure** and **carbon content**
- Microbial PBs help **reinforce and replenish communities of beneficial microorganisms**
- PBs can also increase **suitability of the soil as a habitat for beneficial microorganisms**
- PBs can help **optimise nutrient inputs** while maintaining or improving soil health and fertility

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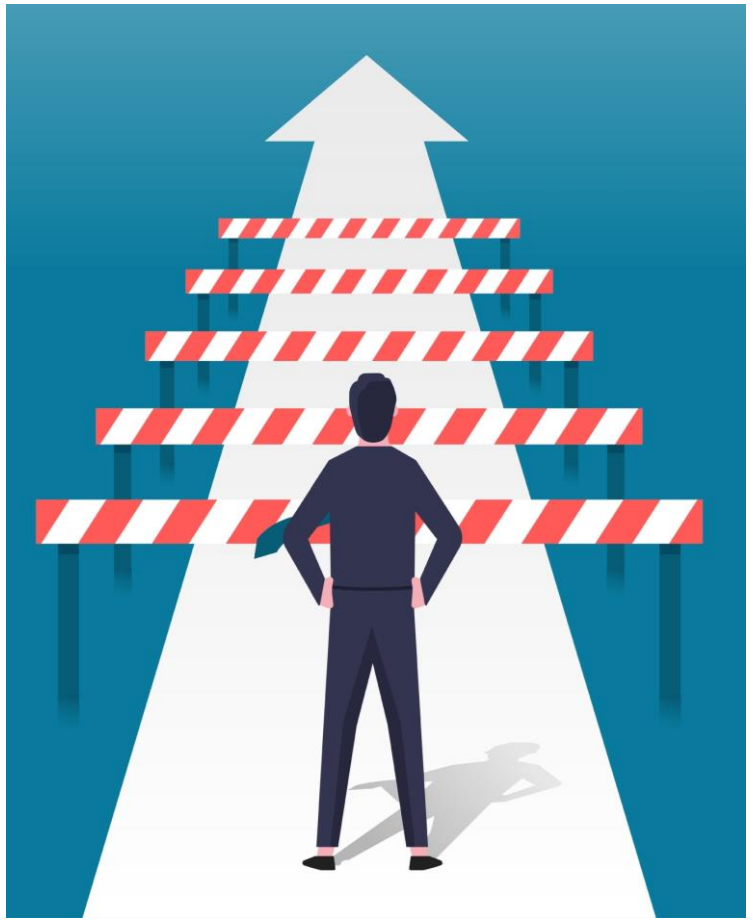
To make their full contribution to more sustainable agriculture, plant biostimulants need enabling policies and regulation

Implementation of the FPR: helpful but incomplete



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- Since July 2022, many EBIC members have succeeded in obtaining the CE mark for their plant biostimulants
- But several obstacles remain:
  - REACH+ requirements in CMC 1
  - Limited positive list of microorganisms in CMC 7
  - Empty list of animal by-products in CMC 10
  - Phosphites banned from the FPR
  - Application of the multiple-use principle
  - "Borderline issues" in the interpretation of claims…

Limited positive list of microorganisms in CMC 7

June 2019

Publication of the FPR with **four types of microorganisms** that can be used in microbial plant biostimulants

- *Azotobacter* spp.
- Mycorrhizal fungi
- *Rhizobium* spp.
- *Azospirillum* spp.

Sep. 2022

More microorganisms proposed for inclusion in CMC 7 through **EU Survey**

Dec. 2023

Technical study contracted to Austrian Institute of Technology (AIT) to assess microorganisms proposed for **agronomic efficiency and safety**

Dec. 2025

Recommendation to the CEG-FP for inclusion of new microorganisms in CMC 7?

- EBIC is monitoring the technical study and providing guidance to members
- EBIC is advocating for a criteria-based approach to CMC 7

EBIC supports members with the PB conformity assessment

- EBIC holds an Observer seat in the 'Coordination Group of Notified Bodies for EU Fertilising Products' and their subgroups, as well as in the 'Commission Expert Group on Fertilising Products'
- EBIC offers to members a full package of explainer documents on the plant biostimulant conformity assessment process (e.g. collecting questions addressed to the Notified Bodies at several occasions and their answers), on plant biostimulant claims/labelling etc.
- EBIC members-only tool: **Quality Reference Guide** for Compliance with Regulation (EU) 2019/1009
- An intranet page with updated regulatory information

Towards sustainable food systems: A call for EU policy to empower farmers with biostimulant solutions

- The upcoming European Parliament elections, the changeover of the European Commission and the start of the planning process for the next Common Agricultural Policy mean that this is an important time for EBIC's advocacy
- EBIC has designed a **manifesto** **to promote the role of biostimulants** in the transition to sustainable food systems while supporting food security and strategic autonomy
- This manifesto outlines how the EU can better support biostimulant producers by **promoting innovation and helping farmers to access products** that can increase their yields and profitability while enhancing the sustainability of their production, such as plant biostimulants
- Through collaborative efforts and strategic policymaking, EBIC members believe that sustainable and resilient food systems can become a reality in the EU

EBIC's manifesto calls on the EU to…

- **Reduce regulatory barriers** hindering the placement of plant biostimulants on the single market today and in future

- **Speed up and facilitate biostimulant technologies' routes to market** (particularly microbial-based products and those derived from animal by-products)

- **Incentivise and facilitate the uptake and application** of beneficial products such as plant biostimulants by farmers

EBIC exists to enable plant biostimulants to deliver on these benefits

- In just 10 years, plant biostimulants have become an **essential tool** for efficient, regenerative farming that sees food system resilience and food production as intertwined goals
- However, **regulatory barriers remain** for some of these products to gain access to market
- Policy and regulatory **coherence**, an enabling framework for agricultural **innovation** as well as **education, training and incentivisation for farmers** is required to future-proof our future food systems with the help of biostimulants and other technologies

EBIC Summit, 13 June, Brussels

- Our EBIC Summit will take place in Brussels on 13 June – with a garden reception in the evening of 12 June – and will bring together **stakeholders** from across the agrifood chain **and EBIC members** to discuss opportunities to create more resilient food systems
- **Stakeholders who want to attend please express your interest at https://ebic.idloom.events/ebic-high-level-summit-2024-stakeholders**
- **Companies manufacturing plant biostimulants must be members of EBIC to attend https://biostimulants.eu/join-ebic/**
- We have speakers from **FoodDrinkEurope, IFOAM Organics Europe, the European Young Farmers, the Consumer Choice Centre, the European Irrigation Association, COPA-COGECA** and many more
- "Pathway to Sustainability" case studies will allow stakeholders to see the benefits of biostimulants in the context of specific value chains

For more information

- Visit the EBIC website www.biostimulants.eu
- Read EBIC's positions
- Look at our recent webinars on soil health or climate change
- Watch EBIC's videos, e.g. about:
  - What are plant biostimulants and why are they useful?
  - What role do plant biostimulants play in food security?
- Follow EBIC on LinkedIn
- Get in touch with the EBIC secretariat: ebic@biostimulants.eu