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BOOSTER

BOOSTING DROUGHT TOLERANCE IN KEY CEREALS
IN THE ERA OF CLIMATE CHANGE



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WHAT IS THE AIM OF BOOSTER?



To enhance drought tolerance in maize and teff by utilizing natural genetic variations and biostimulants derived from living organisms to develop new varieties of drought-tolerant agricultural crops.



START
1st May
2023



DURATION
48 months



EXPECTED
FUNDING
€ 4.9 million



FRAMEWORK
PROGRAMME
European Commission's
Horizon Europe



BOOSTER PLANT SPECIES:

EUROPEAN MAIZE



(Zea mays):
globally utilized cereal.

ETHIOPIAN TEFF



(Eragrostis teff):
orphan cereal.

SOUTH AFRICAN LOVEGRASS



(Eragrostis nindensis):
desiccation-tolerant
cereal found in the wild.



STRATEGIES:



Identify natural genetic variations linked to drought tolerance in maize and teff and **transfer genetic traits** from more drought-tolerant species (teff and lovegrass) to less tolerant species (maize) to improve drought resistance.



Develop novel natural biostimulants, such as seaweed extracts (SWEs) and plant growth-promoting rhizobacteria (PGPR), to enhance drought resilience using an eco-friendly approach.



Implement a synergistic approach that combines genetic and biostimulant strategies to boost crop resilience to climate challenges.



IMPACT:



Mitigation of the decreasing trend of biomass resources derived from maize and teff, for sustainable bio-based production, amid future extreme drought conditions caused by climate change.



Highly transferable strategies for:

- Enhancing drought resilience in other crops or in the same crops cultivated in different countries (e.g., maize in Africa).
- Using the novel “CRE variants” approach to improve quantitative traits in any crops.



Strengthened competitiveness, of both European and African bioeconomy-based industries and improved yield stability with reduced irrigation requirements.

