



Metabolite Technology

Unlock the Power of Nature for
Crop Resilience and Yield

www.icl-growingsolutions.com

Unlock the Power of Nature for Crop Resilience and Yield with Metabolite Technology

Microorganisms in nature produce a wide range of exudates, including organic acids, amino acids, polysaccharides and so many others, act as powerful tools that modulate plant physiological responses, promote nutrient uptake, and enhance root growth. Additionally, they play a crucial role in influencing soil chemical and physical properties, such as soil pH and structure, making the soil environment more conducive to plant health and productivity.

The metabolome of microbial biostimulants is incredibly diverse, containing a multitude of molecules with potential benefits. However, some molecules, or group of molecules, are of particular interest for agriculture. Some fractions possess unique physiological activities, such as enhancing tolerance to salinity, heat, drought and also help crops to recover from periods of stress. Through molecular distillation, we employ sophisticated physicochemical processes to meticulously separate the microbial metabolome into distinct fractions. By analyzing the specific

activities of these metabolite fractions, we carefully formulate them in conjunction with other well-established biostimulant substances.

This approach allows us to create a biostimulant product with unmatched performance, tailored to meet the diverse needs of crops under varying field conditions. Our molecular distillation technology ensures that only the most effective and beneficial compounds are utilized, leading to superior plant growth, resilience, and overall agricultural success.

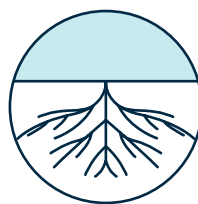
Each special metabolite fraction can function as a powerful biostimulant enhancer, acting directly or indirectly activating plant responses and prompting internal metabolic processes. This activation stimulates the transcriptome, where plants manufacture enzymes and proteins to modulate their metabolic activity. This allows them to adapt to environmental factors and increase stress tolerance.



Enhances nutrient uptake capabilities



Supports vigorous plant growth



Stimulates deeper and more extensive root systems



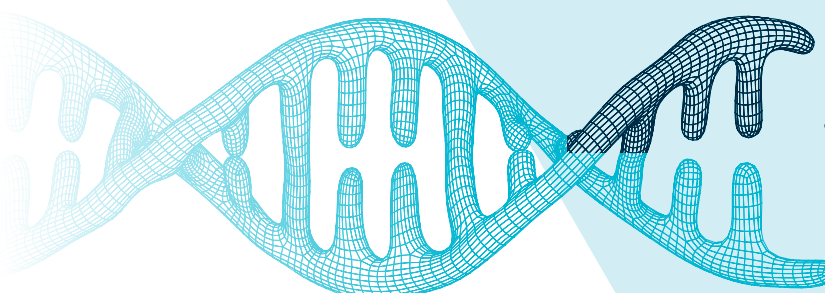
3rd generation Biostimulant



367
activated
genes

203
additional
proteins

During the development of our Metabolite Technology, we leveraged cutting-edge scientific advancements to explore and understand the biostimulant effects at a molecular level. Through rigorous experimentation evaluating transcriptomics in raspberries, we've demonstrated how Metabolite Technology effectively triggers plant responses. We tracked how intensively the plants produced proteins associated with abiotic tolerance. Under control conditions, the plants activated 173 genes to adapt to suboptimal conditions. When treated with Metabolite Technology, a total of 367 genes were activated, resulting in the production of an additional 203 proteins, including stress responsive enzymes like catalases and peroxidases from the antioxidant metabolism, to enhance their tolerance to abiotic stress! This translates to plants having a wider arsenal of tools to fight against adverse conditions. This is the power of activation of Metabolite Technology!



Transcriptomics is one of the most advanced tools in plant biology. This technique enables us to identify which genes are activated or deactivated following the application of our Metabolite Technology.



Improves tolerance and productivity in adverse conditions



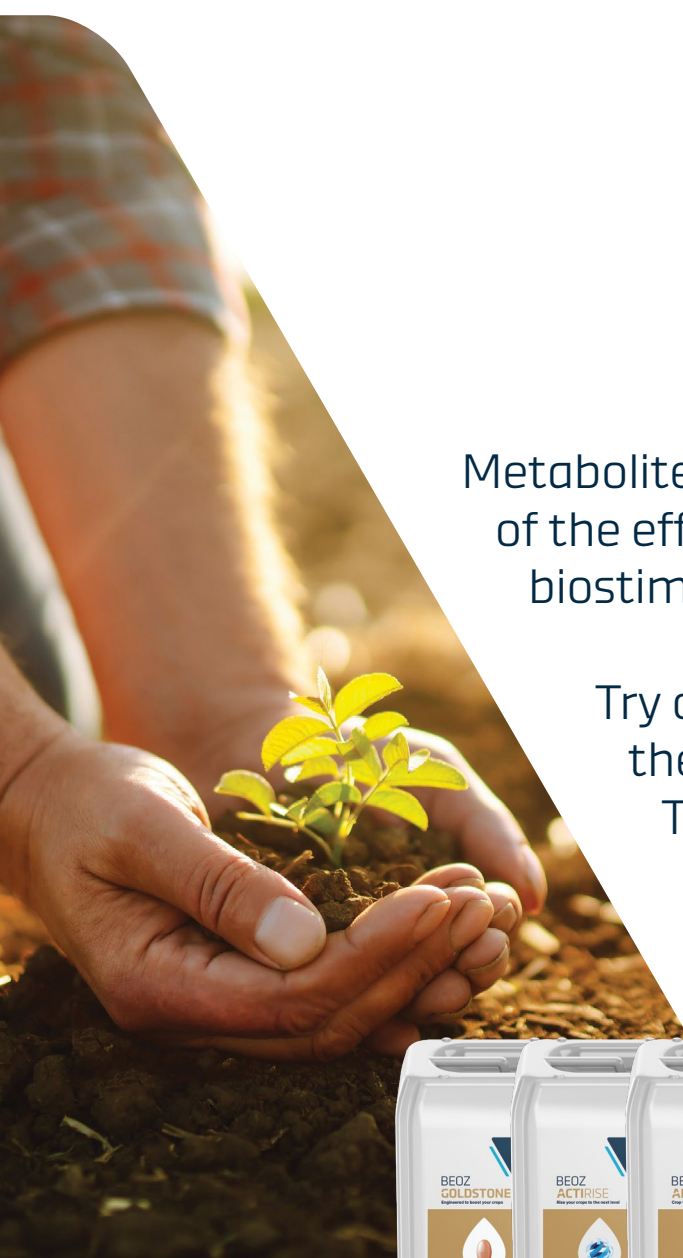
Activation of stress tolerance enzymes



Customized solutions for specific crop requirements



Promotes sustainable and resilient agricultural practices



Metabolite Technology is at the core of the efficacy improvement of BEOZ biostimulant products from ICL.

Try our new BEOZ product range to get the best of your crops with Metabolite Technology and much more.



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