

Talsano™ mode of action

Our Talsano technology stimulates rooting and plant growth and also helps boost resilience to abiotic stress.



Benefits of Talsano technology

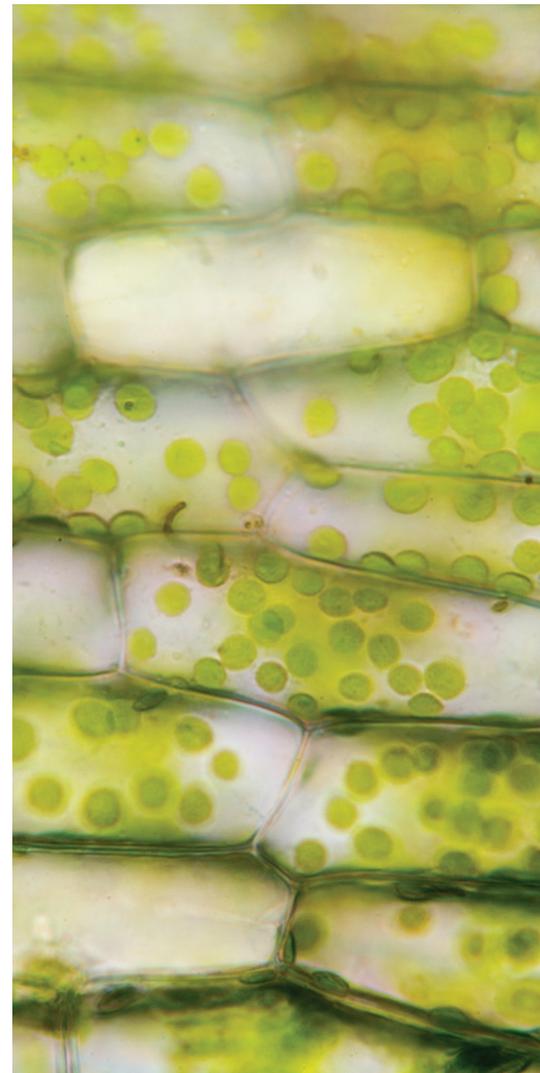
- ✓ Enhances rooting
- ✓ Increases shoot growth
- ✓ Improves resilience to abiotic stress
- ✓ Stimulates crop yields.

Photosynthesis and plant growth

Plants use sunlight, carbon dioxide and water to produce sugars (assimilates), a process known as photosynthesis. The assimilates are metabolised to form other compounds, which are used for plant growth, maintaining existing tissue (e.g. protein turnover) and for operations such as root ion uptake. Furthermore, some of the assimilates are stored for later use. The amount of assimilates available, and how these are partitioned, is highly dependent on environmental conditions.

The role of Talsano

Certain compounds are key building blocks that are used in many biological processes. Talsano is an example of this and is a precursor for thousands of metabolites that have important roles in plant growth, resilience to abiotic stress, signalling and reproduction. While this precursor is naturally occurring, and can be synthesised by plants, a foliar application can reduce the plant's energy directed towards compounds synthesis. More importantly, Talsano also stimulates certain biochemical pathways that enhance growth.



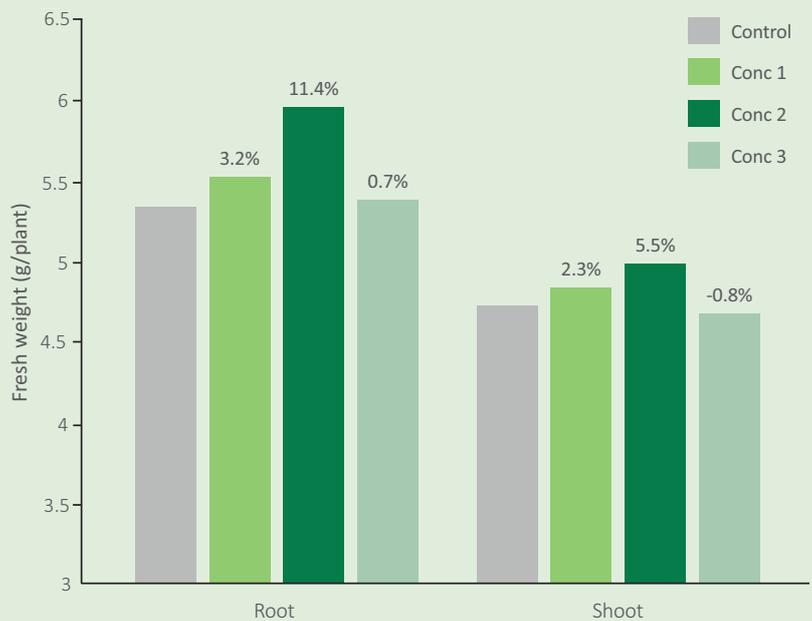
The effect of Talsano on signalling and plant growth

Talsano is an important compound that is used to produce structural components that are essential for plant growth. However, it has other wide-ranging roles, including as a precursor for various compounds involved in plant signalling, with a direct effect on some receptors. As a result, pathways relating to root growth and nutrient uptake can be activated.

Two greenhouse trials assessed a wide range of Talsano concentrations, applied to soybean at the second to third true leaf stage (V2-V3). Plants were then measured three to four weeks later.

Talsano application increased root weight up to an optimal concentration (con 2), and at the highest concentrations Talsano was less effective.

There was a significant response to Talsano concentration ($P < 0.05$), with up to a 11.4% increase in root weight. Additionally, the shoot weight (leaves and stems) increased by 5.5% at the optimal Talsano concentration.



The function of Talsano in the control of abiotic stress

The natural level of Talsano in plants can be insufficient to meet its demand, especially in young rapidly growing plants, and this can limit plant defence. A foliar application of Talsano can upregulate plant defence pathways, so improving the crops resilience to abiotic stress. Additionally, Talsano application has been shown to help control reactive oxygen species and reduce membrane damage.

Talsano™

Find more information on our Talsano technology at:
www.plantimpact.com e: info@plantimpact.com

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