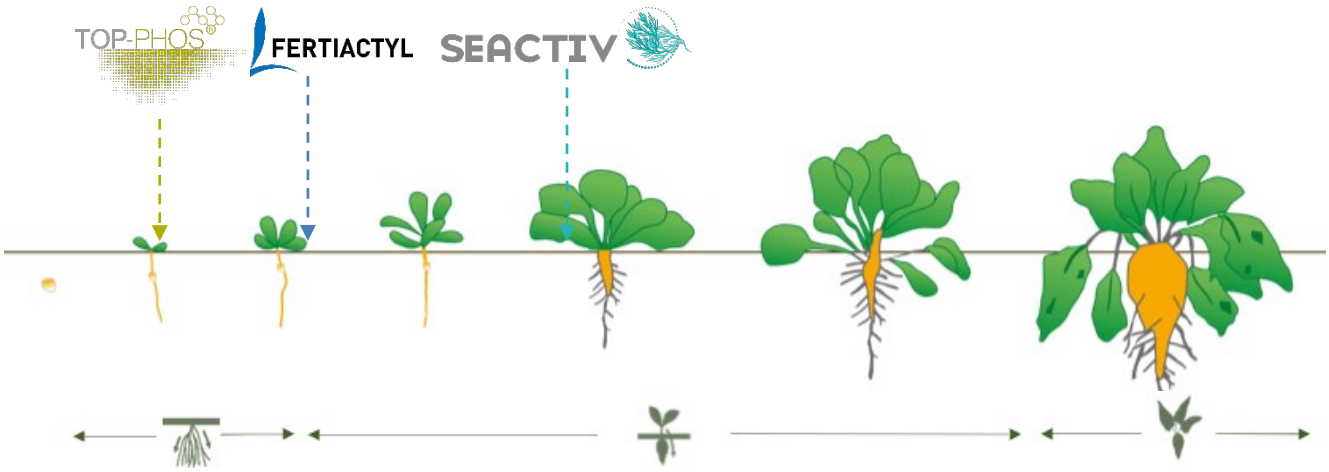
Sugar Beet

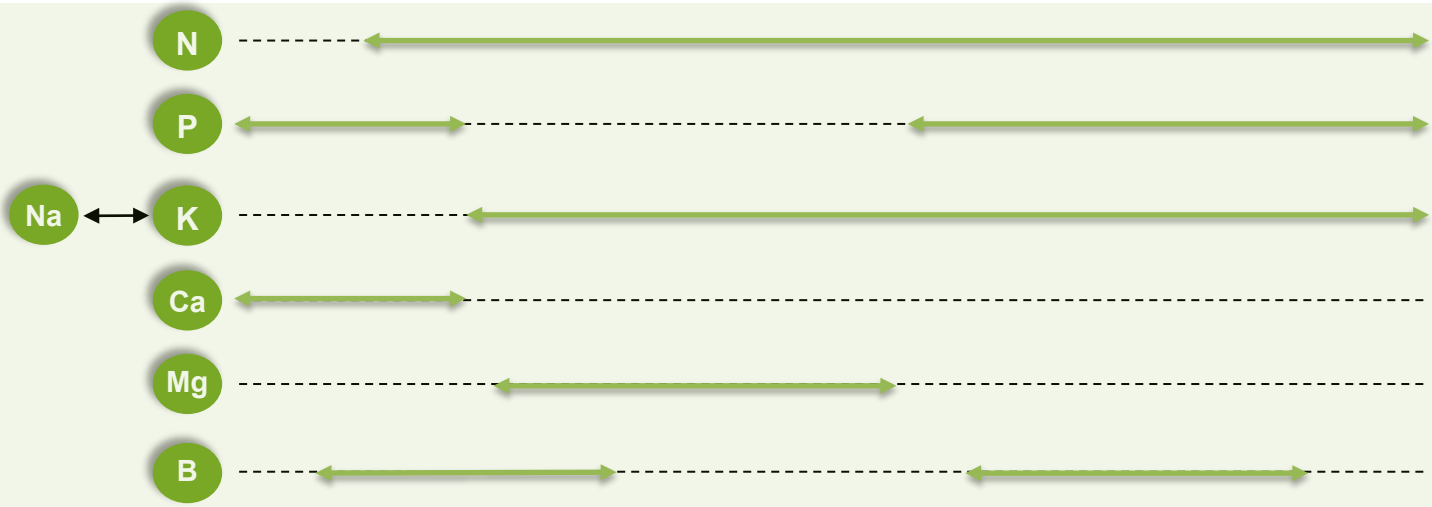
Maximizing sugar content

TIMAC AGRO ADVICE KIT

1 SUGAR BEET FERTILIZATION PLAN



Nutrient Requirements



+ Other trace elements such as Cu, Zn, Fe and Mn.

Fertilization Plan

Top-Phos
At Seeding
140 – 180 lb/ac

Ensure a good crop establishment

Fertiactyl GZ
2 - 4 leaves
2 L/ac

Provide nutrients to support photosynthesis

Seactiv GOLD
6 leaves – 80% covering
2 L/ac

Ensure a good allocation of sugars to root and alleviate fungicides negative effects

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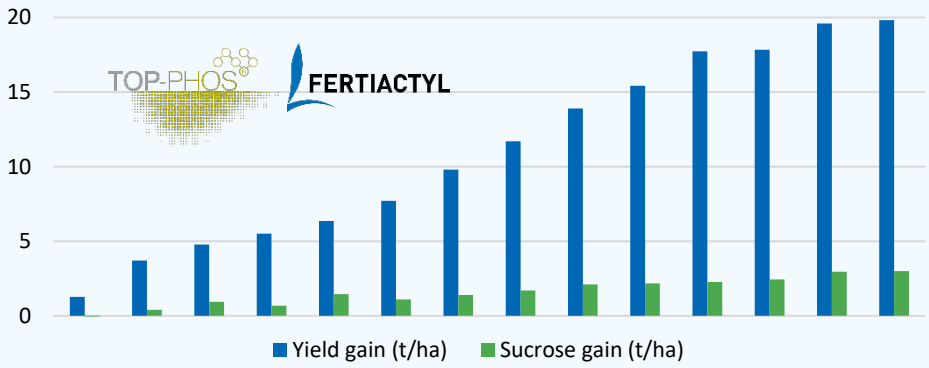
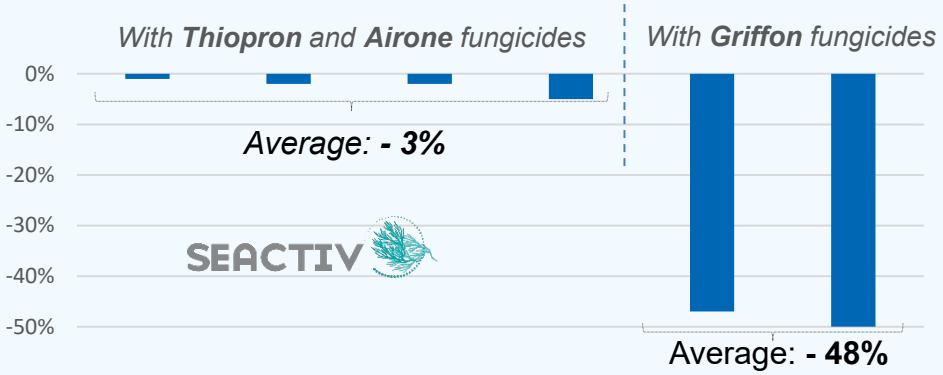
2 FIELD DEMOS

➔ Better development of the plant and faster inter-rank covering thanks to **TOP-PHOS** and **FERTIACTYL**, leading to a better yield and sucrose content.



Synthesis of 14 demos:

- Yield: **+ 11 t/ha**
- Sucrose yield: **+ 2 t/ha**



Synthesis of 5 demos:

- Diseased leaf area: **- 18%**

➔ **SEACTIV** alleviates fungicides stress effect on the plant.

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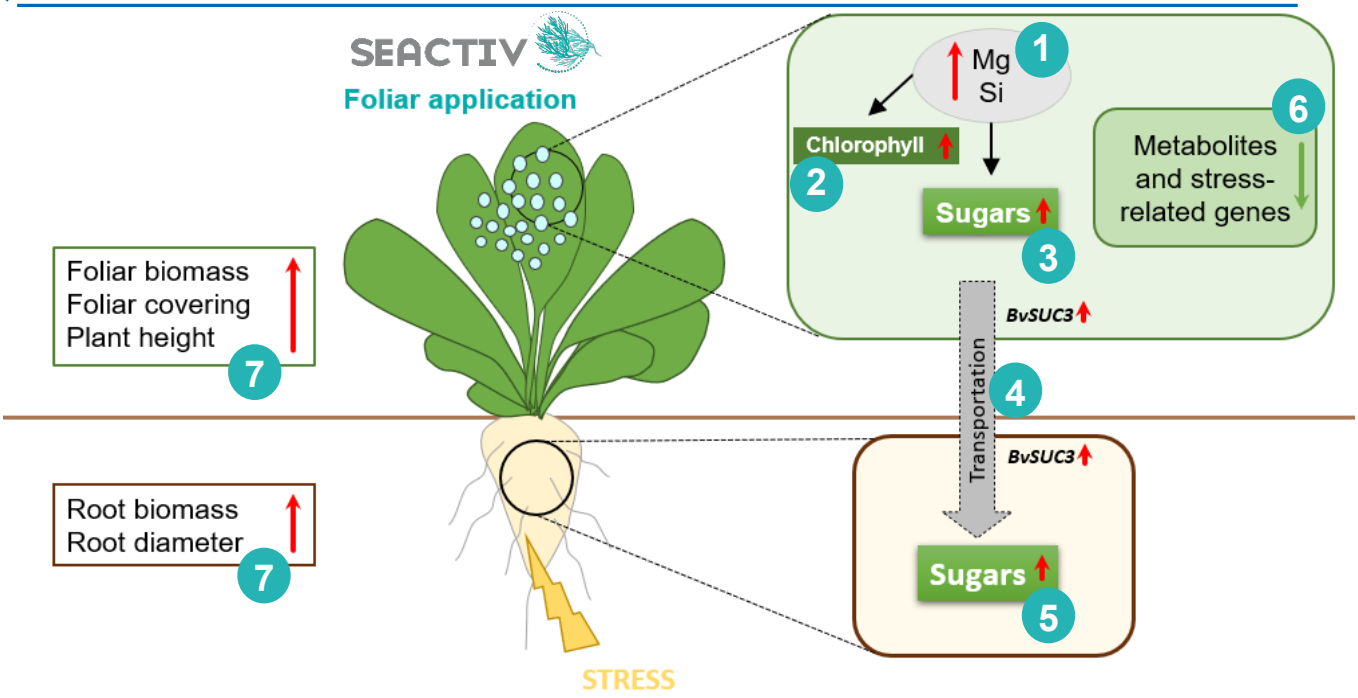
3 CMI TRIALS UNDER STRESS CONDITIONS

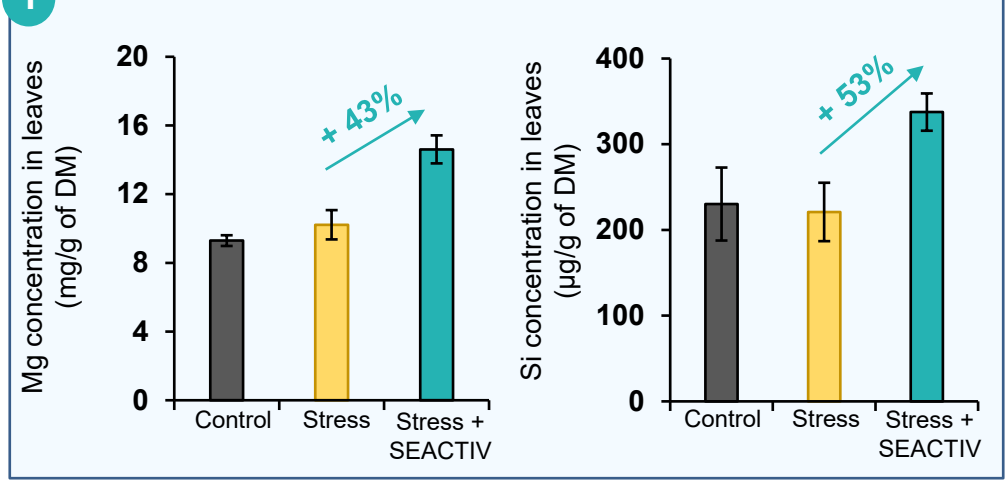


Under stress, the plant metabolism will be highly reduced, and the final yield depends on both the stress itself (nature, intensity and length) and the ability of the plant to recover.
Thanks to SEACTIV application, nutrients will be more available for the plant and some trials highlighted that, among other nutrients, Mg and Si content has been improved in the plant (1):

- Magnesium (Mg) has a role in chlorophyll synthesis. More Mg leads to more chlorophyll synthesis (2) and so, more photosynthesis, meaning more sugars produced by the plant (3). Studies also highlighted that the application of SEACTIV increases the relative expression of BvSUC3 genes (4) both in leaves and roots. These genes are responsible of sugars transportation within the plant. The combination of a higher quantity of sugars produced, and a better transportation of them into the plant result to a better storage of sugars into the root (5).
- Silicium (Si) is involved in stress tolerance. Under stress conditions, the chlorophyll content decreases and there is a modification of some gene expression. Thanks to SEACTIV application, those two negative effects are alleviated (6) meaning the plant feels less stressed.

SEACTIV application has also an indirect effect on the increase of the vegetative and root parts (7) ; increasing even more the final yield.

1



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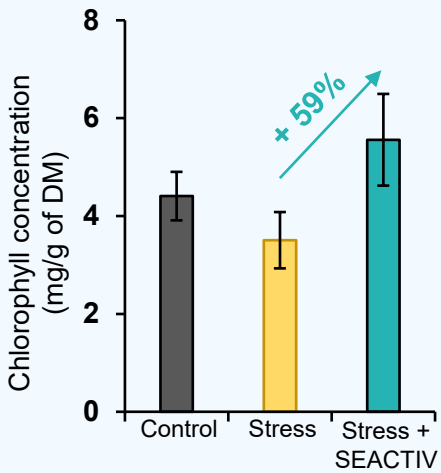

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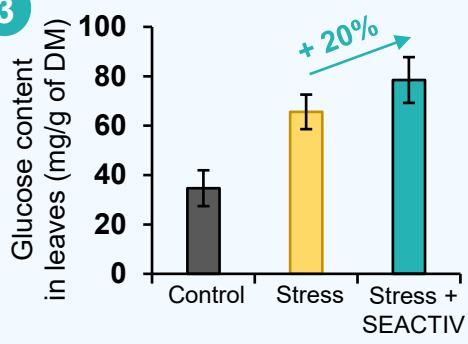

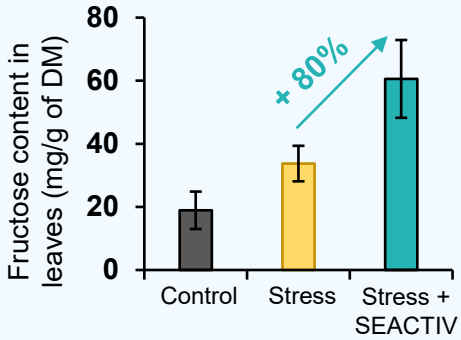

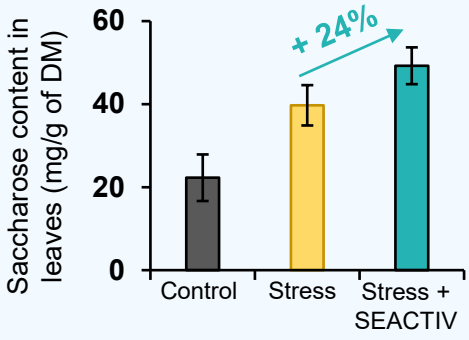

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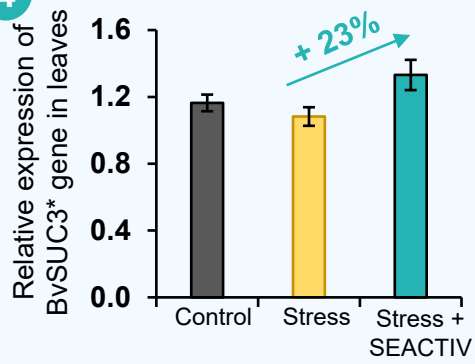

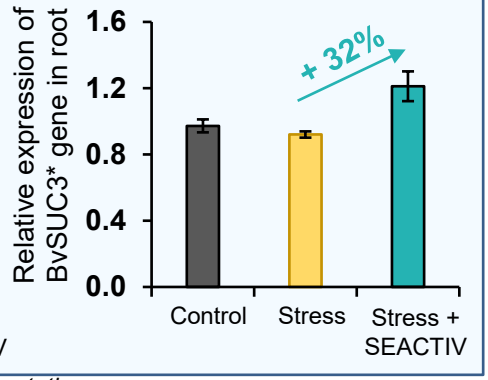

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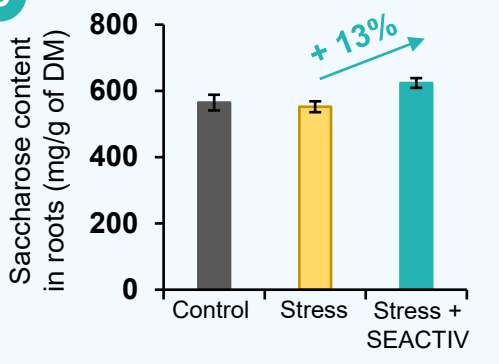

BvSUC3: gene involved in sugar transportation*

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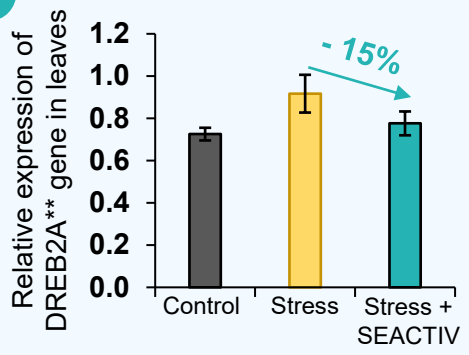

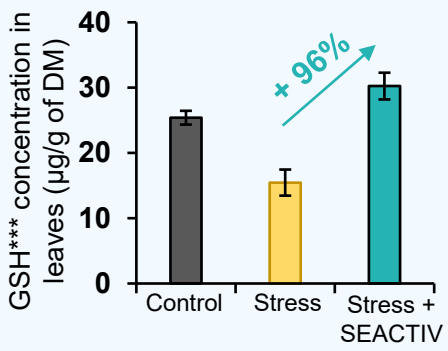

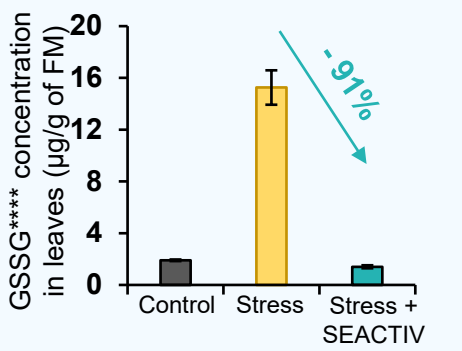

*DREB2A**: gene over-expressed under stress / GSH***: metabolites involved in stress protection / GSSG****: stress indicator.*

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