

Increases the number of germinated seeds and enhance initial plant growth

VigorSeed® contains the fundamental microelements to improve germination, seed emergence and early plant development.

Germination rate, speed and uniformity are very important factors in the development and final production of any crop. This becomes even more important in the current situation, which results in a challenge for the regular plant cycles. These environmental factors can determine the productive success and yields if it is not on our side.

What are the most important nutrients for crop germination?

Stoller Formulation Technology designed for **VigorSeed®** provides zinc and manganese. These micronutrients are key in the development and production of any crop because they support the physiological balance from the initial development of the crop and provide the necessary tools for its growth. They also accelerate the formation of deep roots to improve the absorption of nutrients and water. Thanks to this, the crop will be more resilient and better prepared to deal with unfavorable situations.



- ✓ **Increases final crop production** due to uniform plant development.
- ✓ **Increases the germination capacity of the seeds.**
- ✓ Favors the initial **root development** of the germinated seeds.
- ✓ **Fast and more uniform seed emergence.**
- ✓ **Greater root and vegetative development** of plants.
- ✓ **Better use of water and nutrients (WUE, NUE).**
- ✓ **Certificate for Organic Farming.**

Features	VigorSeed®
Scientific evidence	Tested in scientific trials and field tests.
High quality formulation	Stoller's Formulation Technology has the essential nutrients to help plants improve absorption, translocation and assimilation capacity. Applicable in seed or furrow.
Cost - benefit ratio	High return on investment by improving productivity and profitability.
Green line	Certificate for Organic Farming.

Stoller's Formulation Technology			
Nutrients	Zn	Mn	<i>Ascophyllum Nodosum</i> and <i>Ecklonia Maxima</i>
Content	1.2%	0.8%	Mannitol 0.1%
Physiological properties	Auxin formation. ATP synthesis. Protein and aa synthesis. Gene expression.	Regulates auxin levels. Energy transfer.	Auxin and cytokinin formation. Resistance to abiotic stress.

Density (kg/L): 1.12 ± 0.02

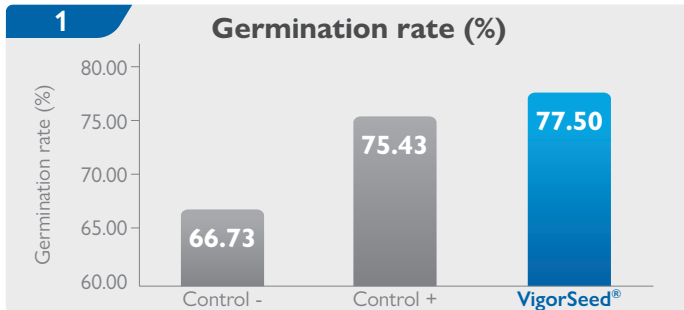
pH: 8.0 - 10.0

Conductivity (ms): 0 - 10

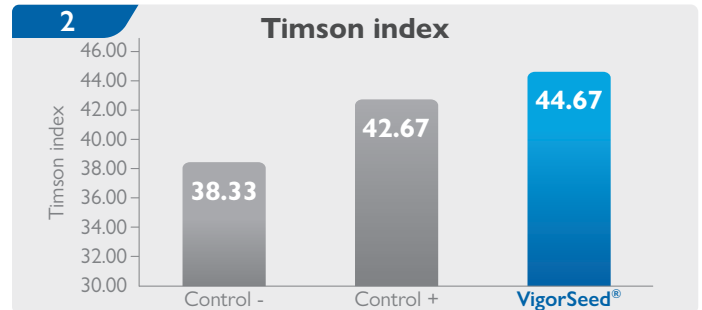


Evidences:

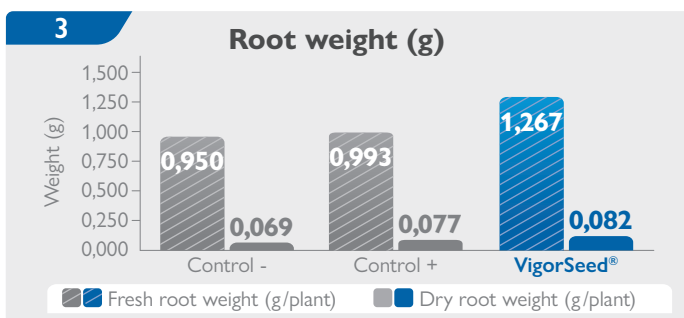
• Wheat



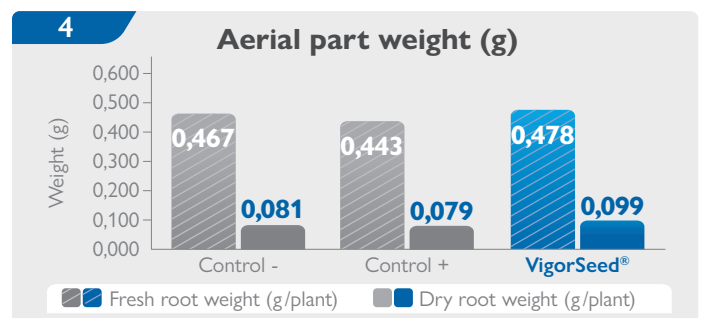
Percentage of germination after 72 h of observation.



Data related to speed of germination after 72 h of observation.



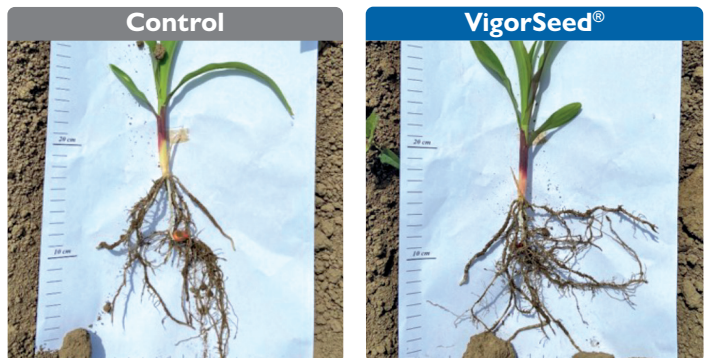
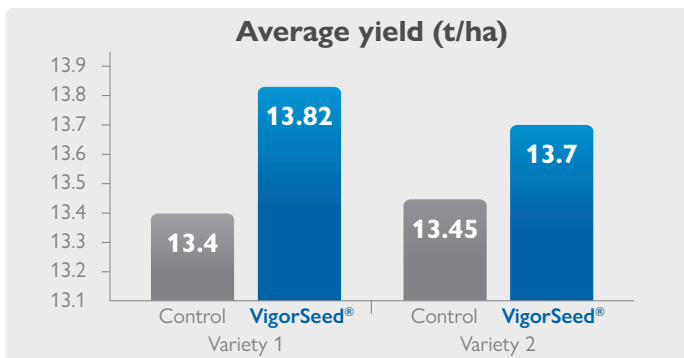
Root development at day 23 after seeding.



Root development at day 23 after seeding.

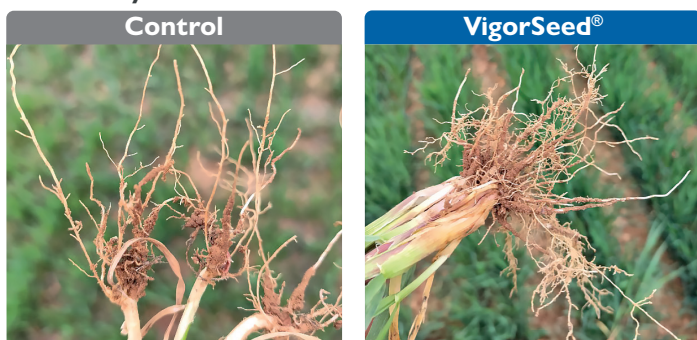
Independent trials show that seed dressing of wheat cv. *Chamorro* with **VigorSeed®** obtains better results than the Control- (water) and Control+ (*Ecklonia Maxima*). We can see on treated seeds an improved germination rate (Fig. 1) and speed of germination (calculated with Timson Index) (Fig. 2). **VigorSeed®** also improves seedling root (Fig. 3) and shoot (Fig. 4) development.

• Corn



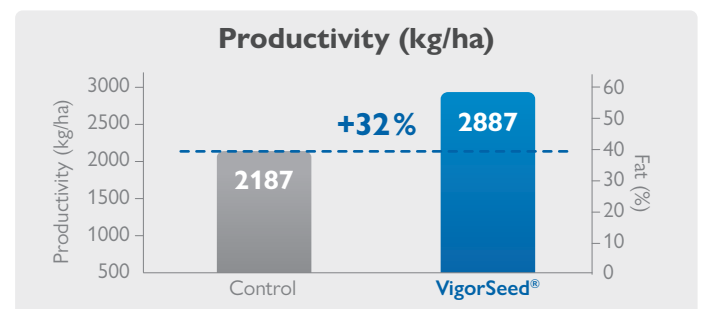
Increased overall yield in comparison with the Control, in the two varieties used in the trial. In both cases, showing increments of 420 kg/ha and 250 kg/ha respectively. These differences translate to higher economic returns for the grower. On the images we can see how with **VigorSeed®** we improve the root development of the crop.

• Barley



Results with **VigorSeed®** 3 months after seeding date.

• Sunflower



At seed treatment, there is an improvement of root development at early stages which results in higher yields.

Evidences:

• Potato



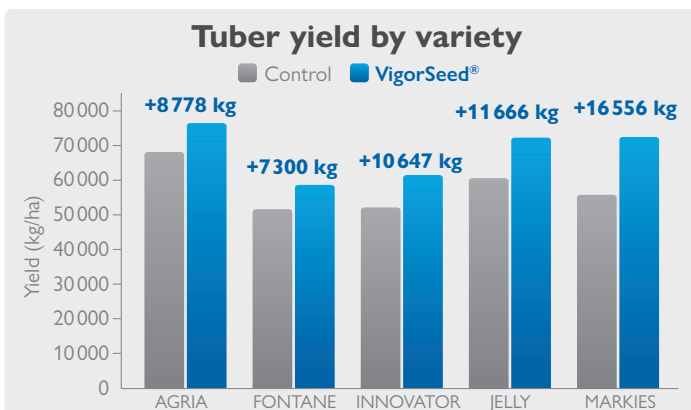
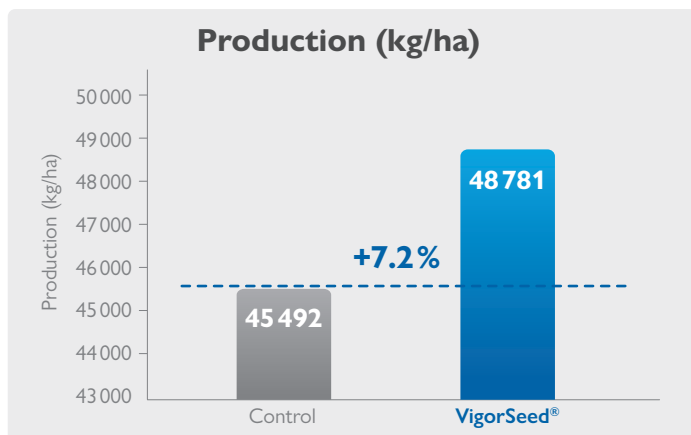
Control plot (left) and the treated with **VigorSeed®** (right). Greater uniformity in germination and development of the vegetative part.

• Garlic

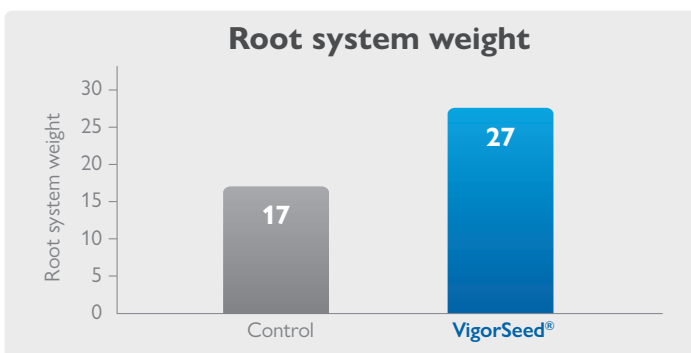


When comparing both treatments, we can clearly see how the garlic treated with **VigorSeed®** shows a greater root and vegetative development.

• Onion



As can be seen, a single treatment improved yields in all potato varieties with significant differences in yields ranging from 12.9% to 29.5%.



Garlic treated with **VigorSeed®** have 38% of more root weight, which is equivalent to a greater number of roots.

As can be seen, the **VigorSeed®** treatments significantly increased yields compared to the Control, resulting in 7.2% higher, which means more than 3300 kg/ha.

Stoller Solutions: Stoller Solutions' value lies in our experience and understanding of plant hormone balance: how it relates to crop growth stages and the impact of the natural hormone activity on plant development and yield.

Our **patented technology** is effective to guarantee a optimal plant growth, getting every hectare, no matter what conditions or challenges we face during the season.