EXPERTS FOR GROWTH

COMPO EXPERT®

Convention Biostimolanti Bari 11/02/2020

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Basfoliar Kelp SL BIOSTIMOLANTE ad attività Ormonale

The Product

Basfoliar Kelp SL is a liquid extract of the Kelp plant ***Ecklonia maxima*** that grows exclusively in the intertidal zone at the South-West coast of South Africa. This concentrate of essential natural bio-stimulants promotes growth, improves quality and reduces stress of crops, resulting in improved agricultural crop production.

Every single batch of **Basfoliar Kelp** is tested, standardized and blended for its key ingredients to ensure that it provides consistent results with each application.

Hormone Content:

11 mg/l Auxins

0,031 mg/l Cytokinins

Basfoliar Kelp promuove gli aspetti fisiologici che migliorano la qualità dei frutti


Basfoliar Kelp applied at the early vegetative stages promotes additional root growth in plants, leading to increased shoot growth, resulting in bigger and stronger plants.

An application of **Basfoliar Kelp** at flowering and fruit growth increases fruit & berry numbers and sizes.


The additional application of **Basfoliar Kelp** at veraison improves coloring, especially in grapes and citrus.

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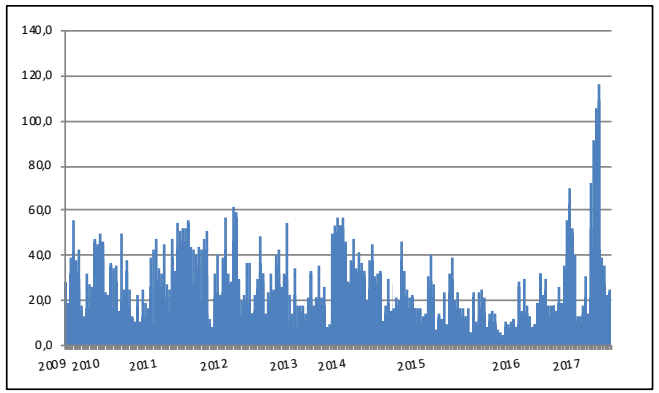
Basfoliar Kelp produzione certificata e garantita.

Extraction – CMP
The Cold Micronization Process

- In several steps, the fresh raw material is inspected, cleaned, minced, mixed, separated, filtered, etc. to produce a liquid concentrate.

- All processes are carefully chosen to keep the circumstances as close as possible to the natural environment in order not to destroy any of the important active substances by the application of heat, chemicals, or pressure.

- Due to the exposure of the source ***Ecklonia maxima*** to the rough and ever changing environment of the intertidal zone of the South African sea, the composition of the bio-stimulating substances in the Kelp material is completely unpredictable. It fluctuates tremendously from location to location, from month to month - even from day to day.



- Therefore, the testing and standardization of the active ingredients in each batch is of the utmost importance in order to provide a reliable Kelp product like **Basfoliar Kelp** with consistent positive results.

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HOW DOES IT WORK?

Potential Active Compounds in Basfoliar Kelp by COMPO EXPERT

- **Macro- and Micro-Nutrients** — Balancing enzymatic processes
- **Vitamins** — Enhance enzymatic processes
- **Amino acids** — Improve vehiculation
- **Polyamines** — In addition to their role as stress-protective compounds, polyamines participate in key developmental processes mediated by specific signaling pathways or in cross-regulation with other plant hormones
- **Polysaccharides** — The two main functions of polysaccharides in plants are long-term energy storage and structure.
- **Phlorotannins** — These compounds possess biological activities, including antioxidant activity, enzyme inhibitory effect, bactericidal activity (effect. *anti-HIV activity, anticancer activity, and antiallergic),* (Li et al., 2011)
- **Betaines** — Osmoprotectants - Detox effect
- **Plant Hormone**

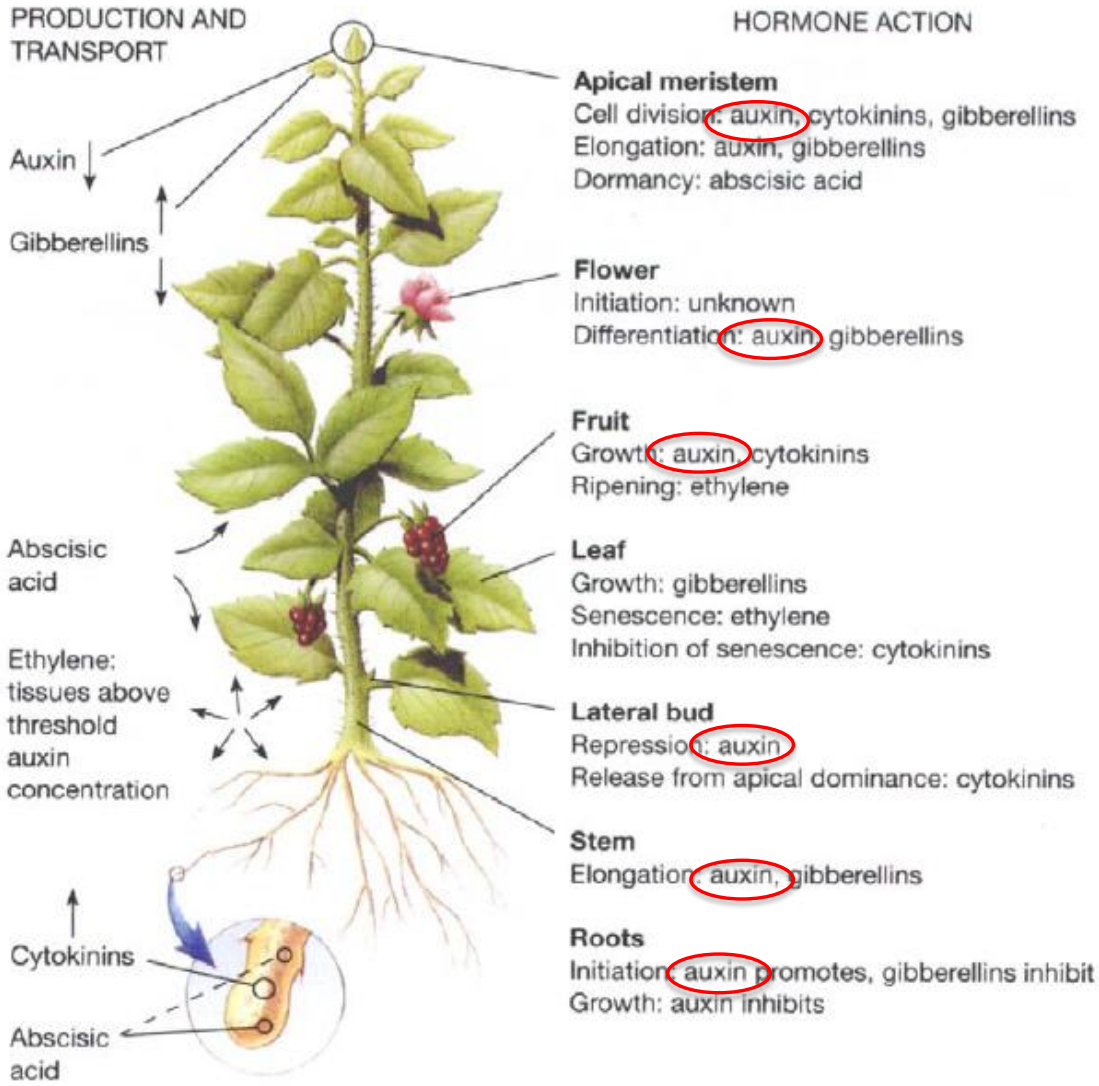
Potential Active Compounds in Basfoliar Kelp by COMPO EXPERT

Plant Hormones are “a group of naturally occurring, organic substances which **influence all physiological processes** at **extremely low concentrations** far below those where either nutrients or vitamins would affect these processes”.

Plant hormones play the essential role in **controlling** the way in which plants **grow and develop**. They regulate the **speed of the growth** of the individual parts and integrate these parts to produce the **final form of the plant**.

Davies Peter J., 2010

The blend makes the formula unique.


PRODUCTION AND TRANSPORT
HORMONE ACTION
Auxin
Gibberellins
Abscisic acid
Ethylene: tissues above threshold auxin concentration
Cytokinins
Abscisic acid
Apical meristem
Cell division: auxin, cytokinins, gibberellins
Elongation: auxin, gibberellins
Dormancy: abscisic acid
Flower
Initiation: unknown
Differentiation: auxin, gibberellins
Fruit
Growth: auxin, cytokinins
Ripening: ethylene
Leaf
Growth: gibberellins
Senescence: ethylene
Inhibition of senescence: cytokinins
Lateral bud
Repression: auxin
Release from apical dominance: cytokinins
Stem
Elongation: auxin, gibberellins
Roots
Initiation: auxin promotes, gibberellins inhibit
Growth: auxin inhibits

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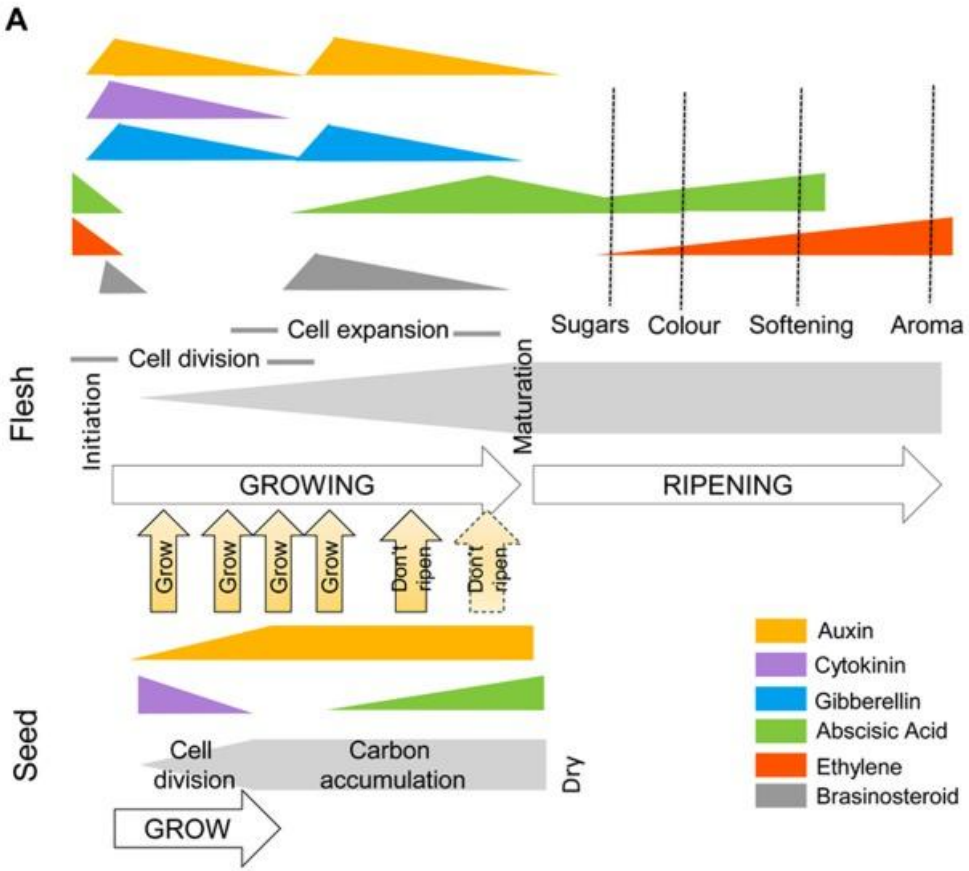
Hormonal changes that occur in a generic fruit during development and ripening



Differential hormone concentrations occur in the seed and the surrounding tissue with the developing seed influencing its environment. Multiple studies have shown that increases in auxin, cytokinin, gibberellin, and brassinosteroids at fruit set, and an involvement of auxin, gibberellin, and brassinosteroids at fruit growth. For fruit maturation there is an inhibition of auxin transport from the seed and increase in ABA. This triggers the ripening/senescence program which leads to an increase in ABA and/or ethylene biosynthesis and response in the surrounding tissue.

P. McAtee et al., 2013

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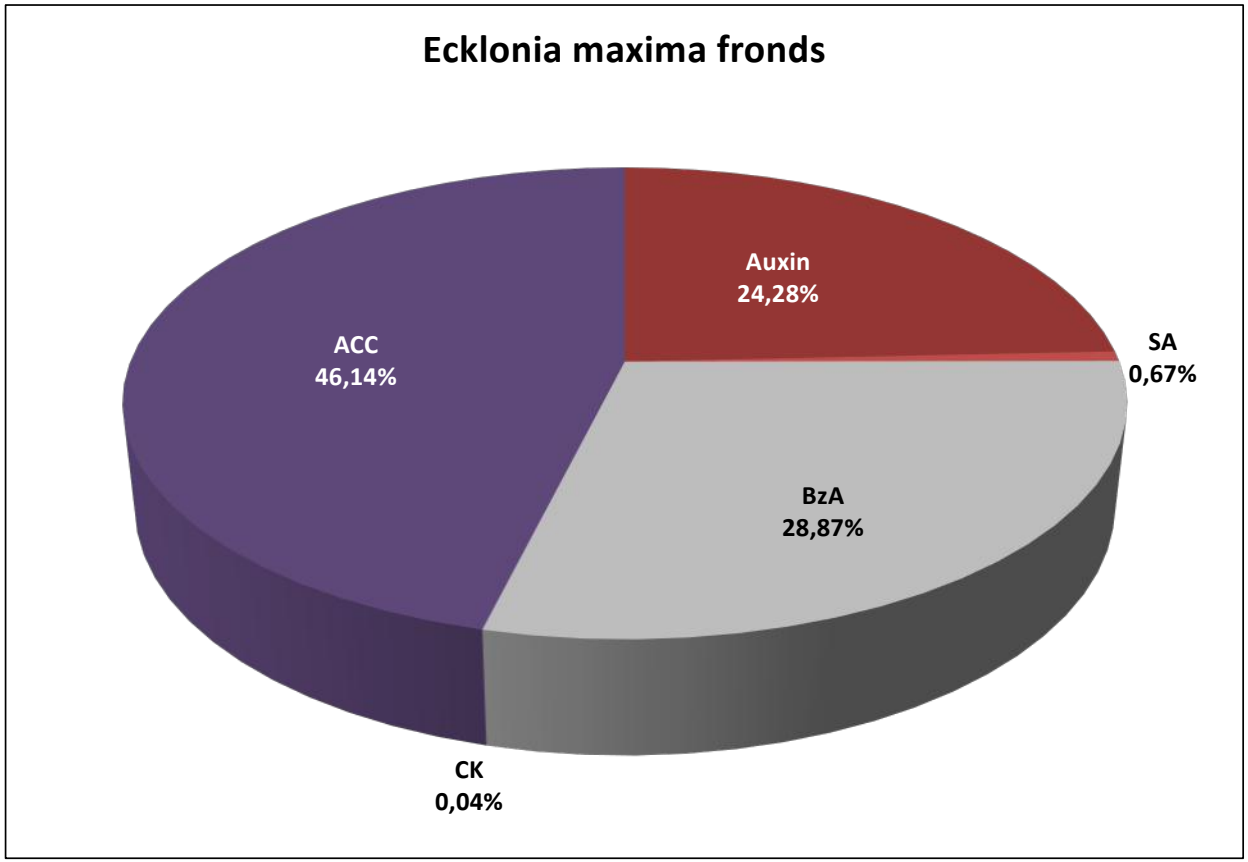
Basfoliar Kelp SL contains a valid hormonal panel



Auxin
SA (Salicylic Acid)
BzA (Benzoic Acid)
CK (Cytokinin)
ACC (1-Aminocyclopropane-1-Carboxylic Acid)

Ecklonia maxima

A brown *„Kelp“* seaweed unique to the South-West coast of South Africa

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Basfoliar Kelp in Table Grapes in Chile - Effect of different concentrations

Objective: Evaluate the effect of different applications of Kelp on berry size in table grapes

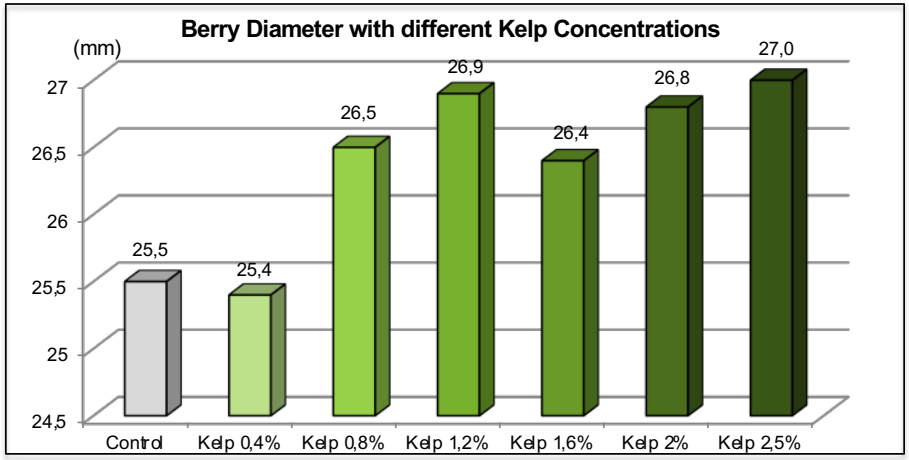
Who: Compo Experts
Where: Quinta de Ticoco, Chile
Study Design: Controlled field study, randomized block design (4 x 4 plants)
Variety: **Red Globe**
When: Season 2002

Treatments								Results
No	Product	Dosage	Water (L/ha)	No of applications	Berry size 12 mm	Berry size 14 mm	Berry size 16 mm	Diameter (mm)
1	Control							25,5
2	Kelp	0,40%	400	3	x	x	x	25,4
3	Kelp	0,80%	400	3	x	x	x	26,5
4	Kelp	1,20%	400	3	x	x	x	26,9
5	Kelp	1,60%	400	3	x	x	x	26,4
6	Kelp	2,00%	400	3	x	x	x	26,8
7	Kelp	2,50%	400	3	x	x	x	27,0

Conclusion:

Increasing concentrations of Kelp increased the berry diameter.

However, 3 applications with 1.2% also gave a very good result and increased berry diameter by 5.5%.



Basfoliar Kelp in Table Grapes in Chile - Effect of different timings

Objective: Evaluate the effect of different applications of Kelp on berry size in table grapes

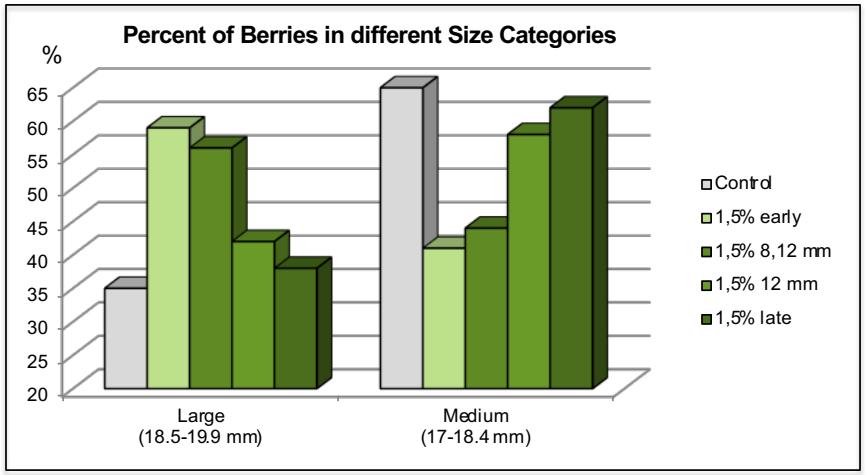
Who: Compo Experts
Where: San Lorenzo, Chile
Study Design: Controlled field study, randomized block design (4 x 4 plants)
Variety: **Crimson seedless**
When: Season 2002

Treatments									Results	
No	Product	Dosage	Water (L/ha)	No of applications	Berry size 4 mm	Berry size 8 mm	Berry size 12 mm	Berry size 14 mm	Large (18.6-19.9 mm)	Medium (17-18.5 mm)
1	Control								35	65
2	Kelp	1,50%	500	3	x	x	x		59	41
3	Kelp	1,50%	500	3		x	x	x	38	62
4	Kelp	1,50%	500	2		x	x		56	44
5	Kelp	1,50%	500	1			x		42	58

Conclusion:

In this trial, Basfoliar Kelp have been tested at different times and numbers of applications.
All treatments increased the number of berries in the large category.

When sorted according to the timing of the applications it becomes clear that the highest benefit was achieved with 3 (and 2) applications at the earlier time points.



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Basfoliar Kelp in Table Grapes in Chile - Effect of number of applications

Objective: Evaluate the effect of different applications of Kelp on berry size in table grapes

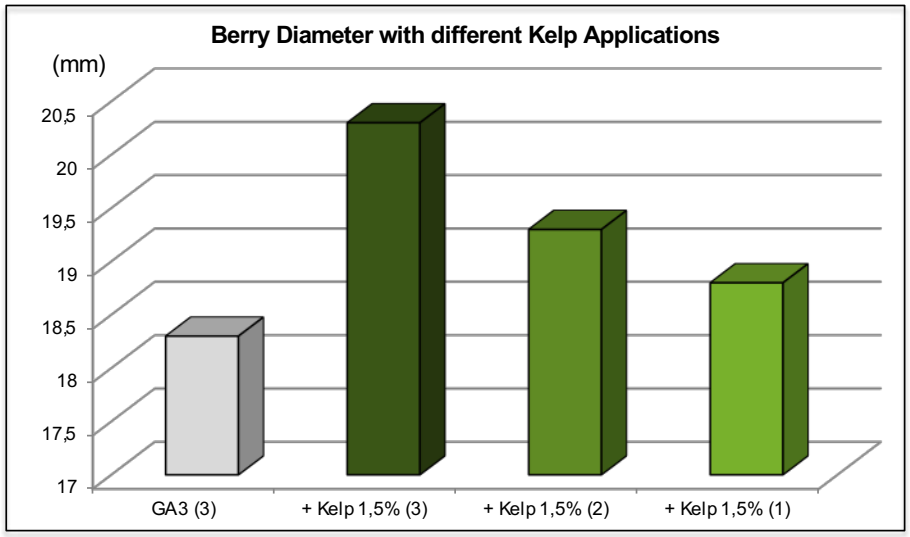
Who: Compo Experts
Where: Rancagua Region, Chile
Study Design: Controlled field study, randomized block design (12 x 4 plants)
Variety: **Thompson seedless**
When: Season 2002

Treatments								Results	
No	Product	Dosage	Water (L/ha)	No of applications	Berry size 4 mm	Berry size 8 mm	Berry size 10 mm	Diameter (mm)	%
1	GA3	40 ppm	500	3	40 ppm	40 ppm	40 ppm	18,3	100%
2	Kelp	1,50%	500	3	x	x	x	20,3	111%
3	Kelp	1,50%	500	3		x	x	19,3	105%
4	Kelp	1,50%	500	3			x	18,8	103%

Conclusion:

The addition of Kelp at a concentration of 1.5% to the standard gibberellic acid treatment increased the diameter of berries considerably.

The best result was achieved with 3 Kelp applications which increased the berry diameter significantly by 11%.



Basfoliar Kelp on Flame seedless in California 2018

Objective: Evaluate the effect of 3 applications of **Basfoliar Kelp** against standard farmer practise on Flame seedless under commercial conditions

Who: SunDate

Where: Coachella, California

Study Design: Randomized block design

Variety: **Flame seedless**

When: April 2018 – May 2018

Treatments

Control	Grower's Standard (GS)
Basfoliar Kelp	GS + 10 L/Ha BK– GS + 10 L/Ha BK (+16d) - GS + 10 L/Ha BK (+7d)

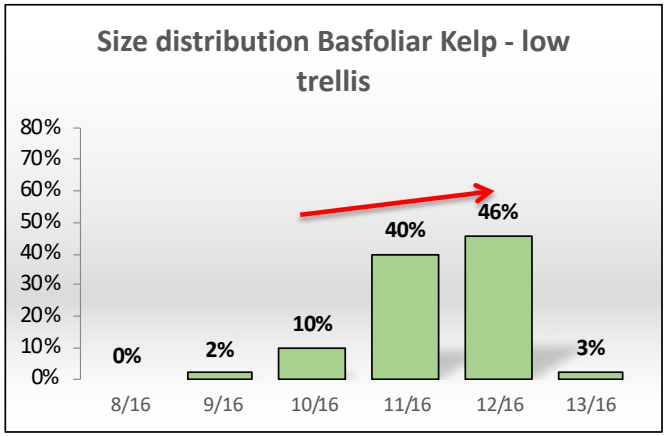
Results/Conclusions:

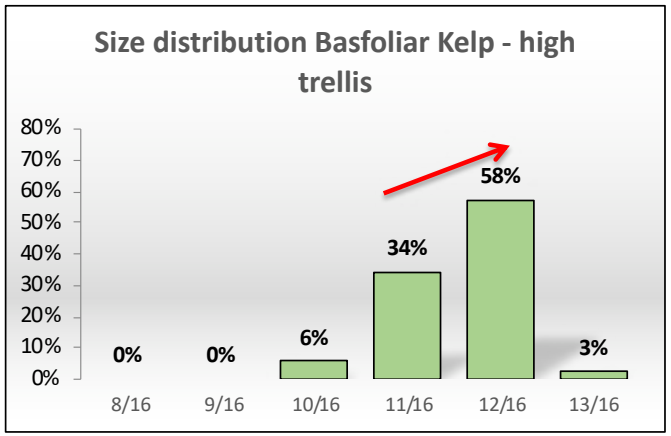
The **Basfoliar Kelp** treatments had a very positive effect on the distribution of the berry sizes by increasing the number of berries in the bigger categories. This effect could be seen in both trellising systems (low and high).

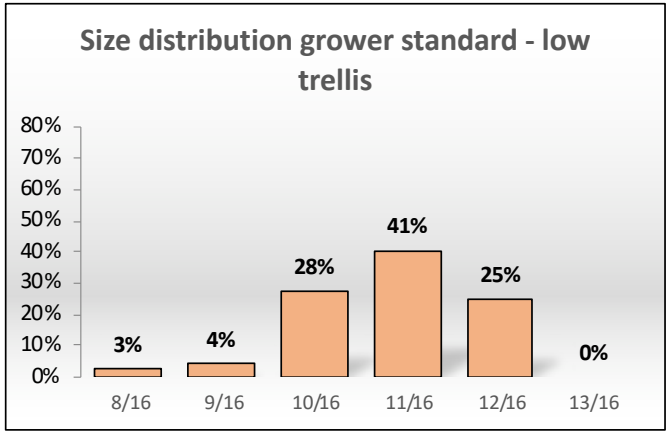
The same positive effect of **Basfoliar Kelp** could be seen on the color categories.

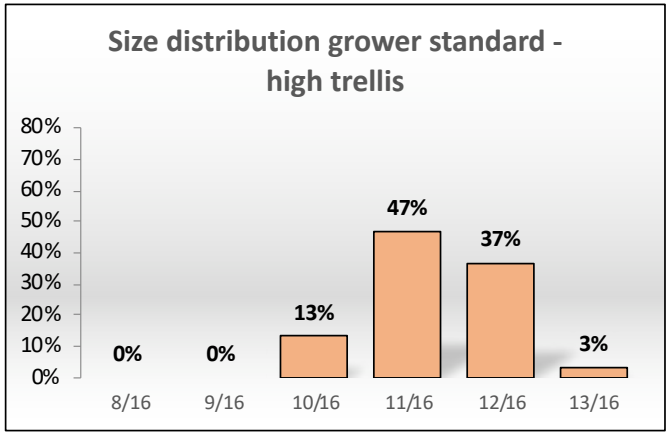
Basfoliar Kelp on Flame seedless in California 2018

Results



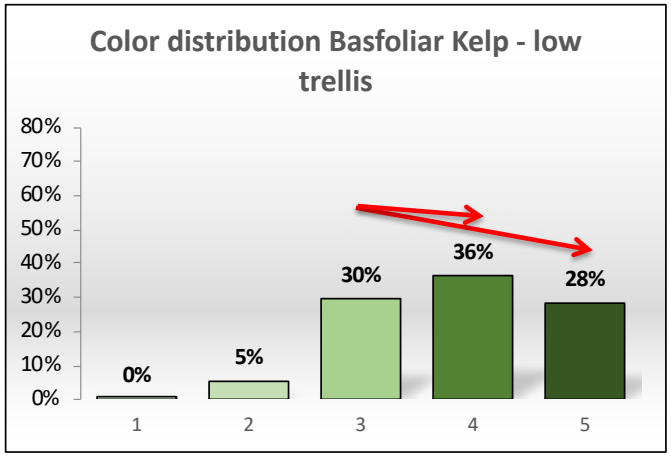


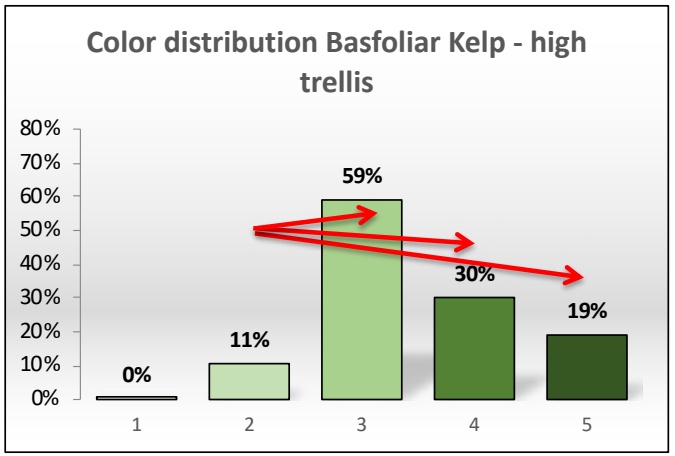


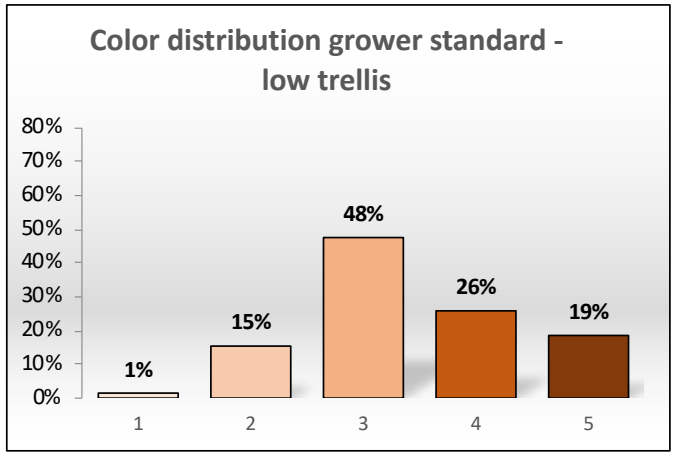


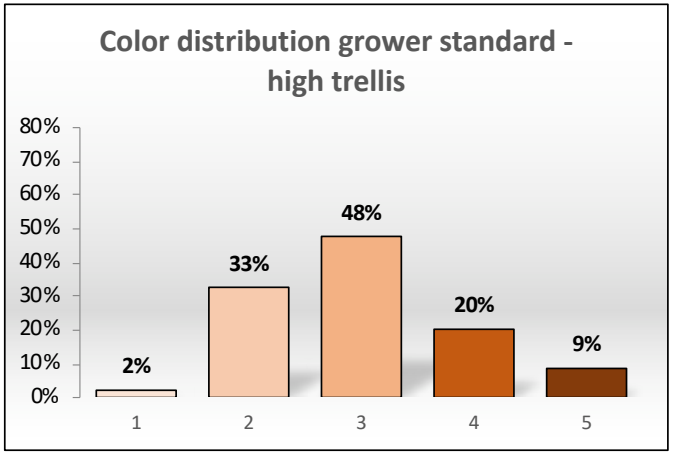
Basfoliar Kelp on Flame seedless in California 2018

Results









Summarizing…

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How and when to apply Basfoliar Kelp on table grapes

Why	Improve shoot growth	Improve berry size	Improve berry size & coloring	
How	2 Foliar Sprays (3-7l/ha)	2-3 Foliar Sprays (3-7l/ha)	1-2 Foliar Sprays (3-7l/ha)	

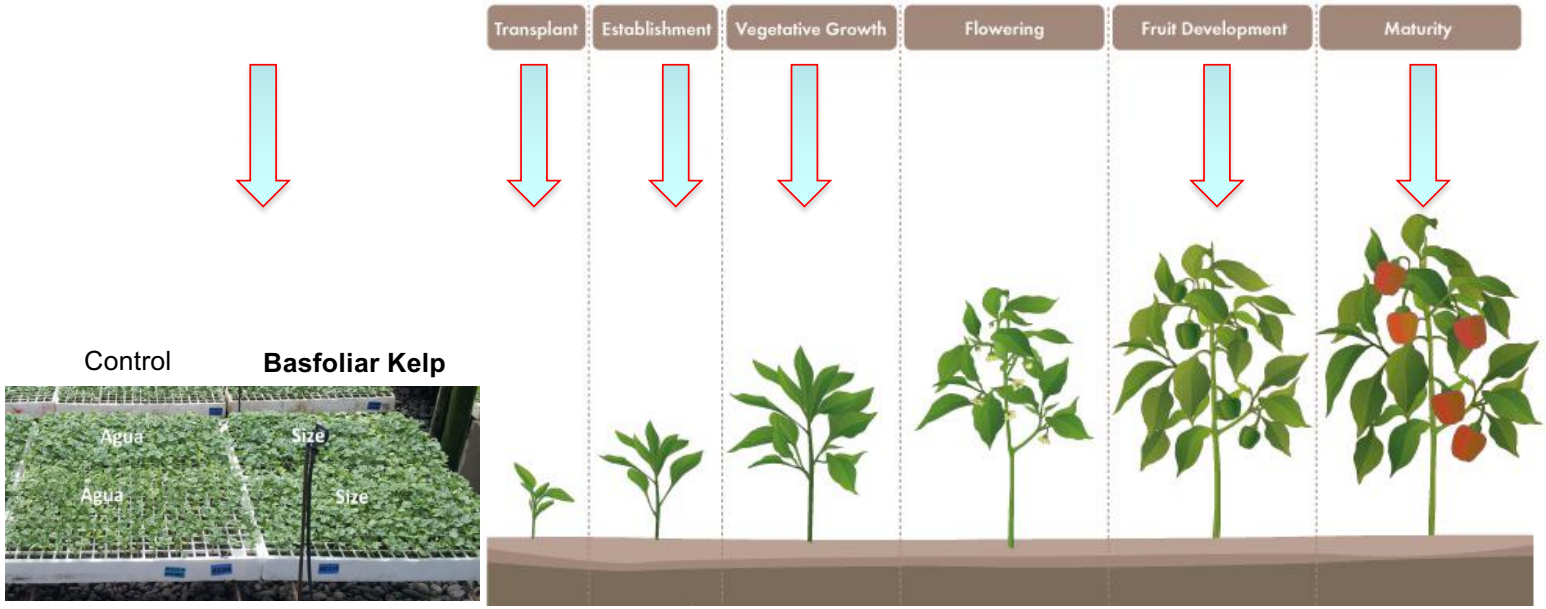
How and when to apply Basfoliar Kelp on citrus

	Seeded varieties (Oranges, Mandarins, ...)		Clementines	
Why	Improve number of fruits	Improve retention and size	Improve fruit size & retention	Improve fruit size
How	1-2 Foliar Sprays (5l/ha)	1 Foliar Spray (5l/ha)	1 Foliar Spray(5/ha)	1 Foliar Spray (5/ha)

Flowering (Initiation) **Fruit set** **Fruit drop (Before)** **Fruit growth**

How and when to apply Basfoliar Kelp on vegetables

Why	Improve quality of seedlings		Increase root development and plant growth			Improve fruit size and quality
How	Dip or Drench (2.5%)	Drench (2.5%)	Drench (2.5%)	2 Foliar Sprays (3l/ha)		2 Foliar Sprays (5l/ha)



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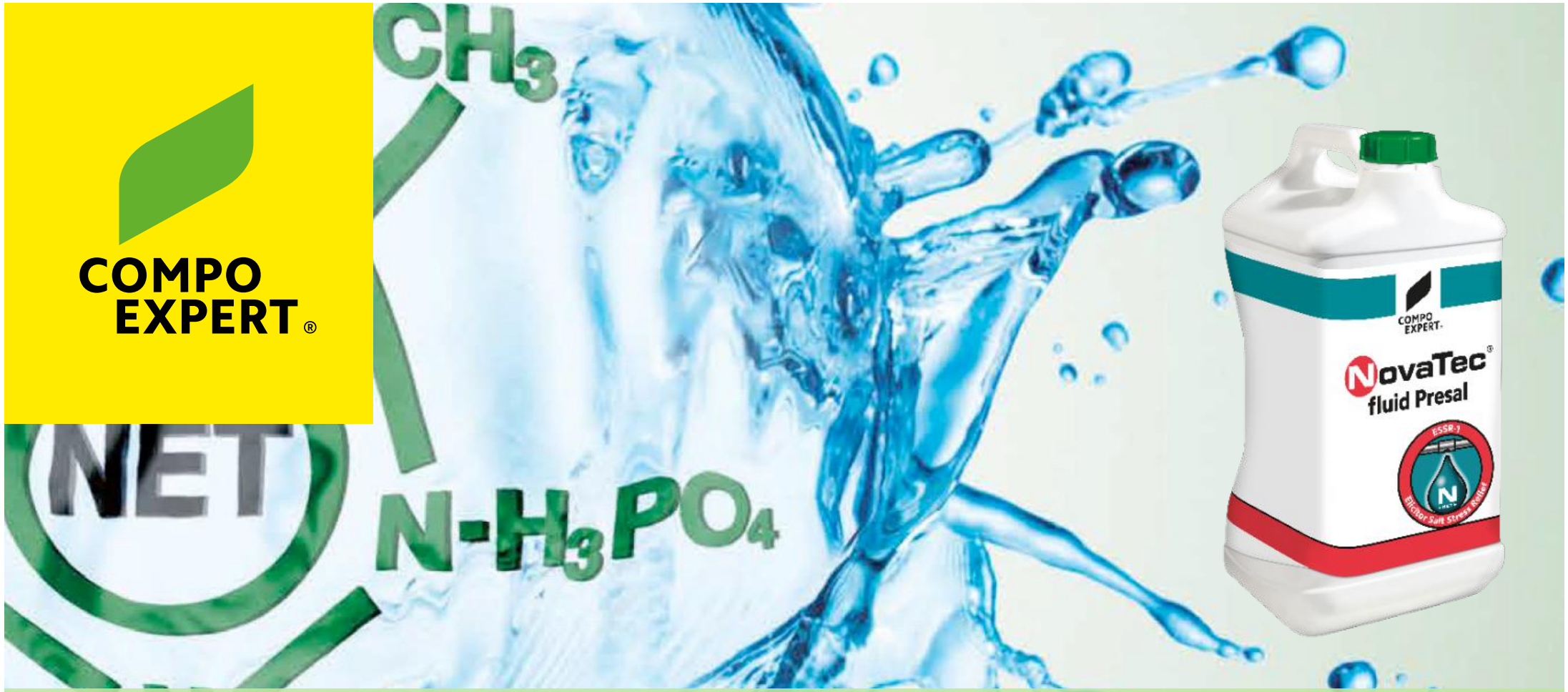
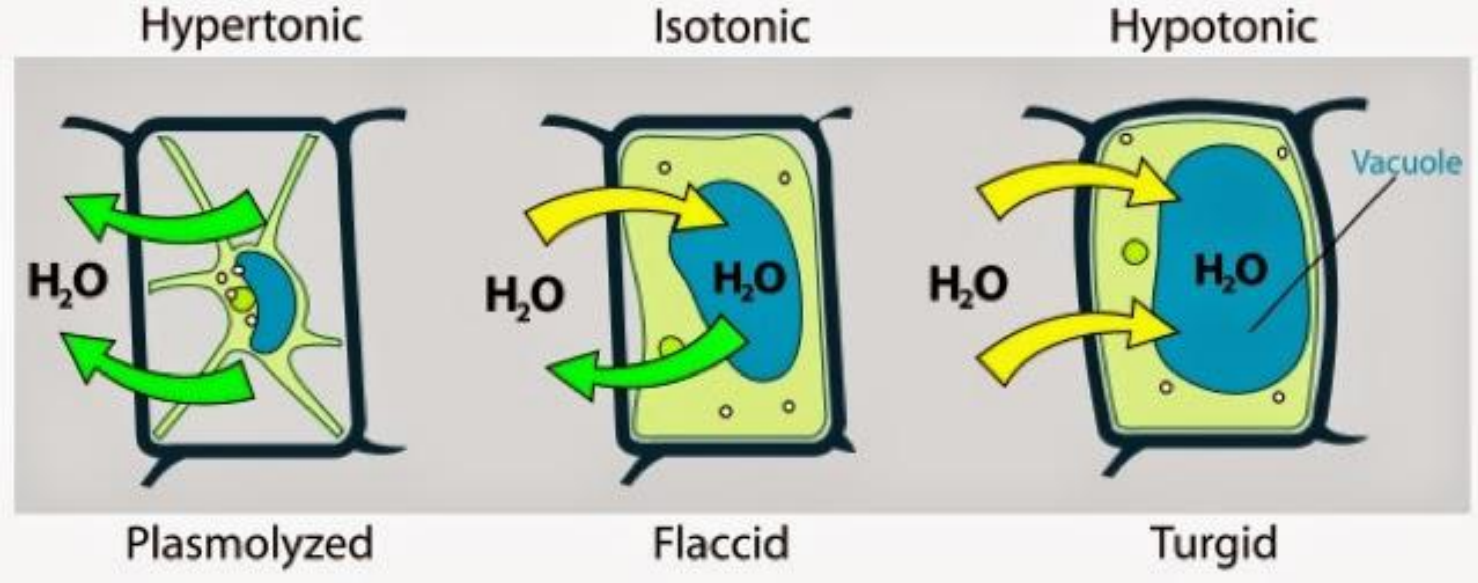


NOVATEC PRESAL
Elicitors for salinity reductio

Osmotic pressure in the cell

Relation of salts between outside and inside the plant cell

Outside > Inside Outside = Inside Outside < Inside



The salinity influence the hydric balance of the cell

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Presal reduces the salinity damages in the plant

NovaTec fluid Presal is a physiology activator of new comception which combine the NET technology with ESSR-1 elicitor.
Thanks to the precence of **ESSR-1**, NovaTec fluid Presal works inside the plant as osmo-regulator and osmo-protective molecule.
Elicitor: molecule that induce a biochemical answer in plant.

ESSR-1

Elicitor for **S**alt **S**tress **R**elease (Unic)

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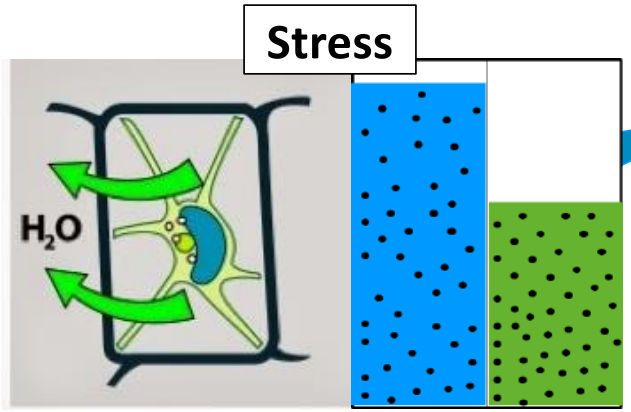
Novatec Fluid Presal activity in the cell

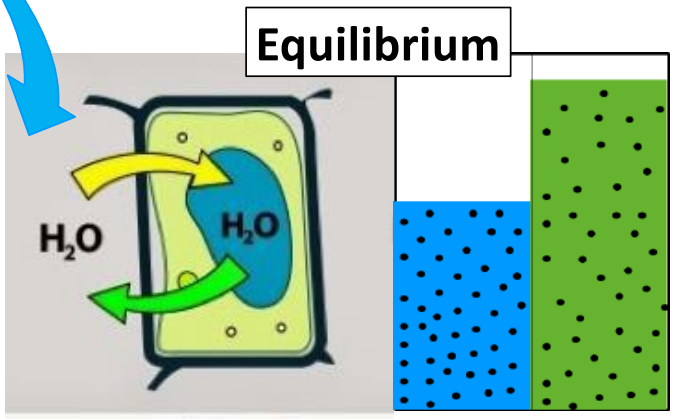
Thanks to the osmotic effect of the elictor we have damages reduction due to salinity stress.

We have back:

- Cell volume
- Activ transport of sugars and amminoacids



PRESAL promotes the vacuole physiology that allows to collect more cations from sap and to neutralize salinity damages – OSMOTIC action



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GRAZIE

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