



gruposol

metragro

SELF-DEFENCE INDUCERS

Teca™ TOTAL MAX



Welcome to Grupo Iñesta



Grupo Iñesta is a business group specialized in the **design, formulation, manufacture, and marketing** of liquid products for **sustainable agriculture**.

Our excellent human team, cutting-edge laboratory and controlled manufacturing processes allow us to manufacture specialty tailor-made fertilizers formulated with maximum quality raw materials obtained from mineral and vegetable resources that work in all kinds of conditions.

We carry out rigorous quality control (QC) on ALL manufactured batches. In addition, a batch is not released for sale until it passes the double check quality assurance (QA) filter. That is why Grupo Iñesta has total **confidence** and **trust** in the products it launches onto the market.

QUALITY
CONTROL



Double check

QUALITY
ASSURANCE



Our commitment with quality and our Know-how, environmentally friendly, allowed us to have presence in more than **35 countries**.

We develop high quality solutions for today's farming, looking for the best results to maximize productivity and ROI of your crops, adapting our programs to large field extensions and orchards, all over the world.

Pioneers

formulating special fertilizers and self-defence inducers, as in their application programs. We continue growing thanks to our research, developing increasingly technologically advanced products.

Looking for a new agricultural model more
profitable, efficient and sustainable,
making easier farmers goals.

Self-Defence Inducers

The list of external threats your crops face on a daily basis is seemingly endless: fungi, bacteria, pest attacks, nematodes in the soil... but fortunately nature is wise and has endowed your plants with a series of mechanisms that help them resist and recover from those attacks that put your harvest at such great risk. The effectiveness of these defence mechanisms, as in humans, depends on the quality of nutritional intake.

Our range of defence-inducing fertilisers is designed using natural compounds that have the ability to generate defence reactions and stimulate the synthesis of resistance molecules in plants. These molecules circulate through the vascular system reinforcing the immune system, thus leading to stronger and healthier crops. Our inducer products are **RESIDUE-FREE**.

Inducers can be applied before pathogen attack, having a PREVENTIVE effect and, once disease has started, they help to CONTROL its development. Both mechanisms activate innate natural defenses, helping the crop to defend itself. These products are safe to people, animals and plants, therefore, Self-Defence Inducers are environmentally friendly.

We advise to include Self-Defence Inducers in the Plant Protection Program.

PROTECT YOUR CROP



Innovation

Teca™ TOTAL MAX is the most advanced Self-Defence Inducer formulated by Grupo Iñesta, designed to be the best natural defense tool in the market.

Teca™ TOTAL MAX has been evaluated by international research centers and independent partners with the goal of building confidence in our product and its effectivity.



Description

Teca™ TOTAL MAX is a cutting-edge Self-Defence Inducer developed to activate plant's natural defense mechanisms, guaranteeing total and 100% natural protection of the crop against all types of pathogen infections. The product is free of biocidal substances, does not show phytosanitary activity and is a RESIDUE-FREE product, so it does not have a pre or post-harvest safety interval.

As a result of the most advanced research and technology, its formulation contains a unique combination of inducing substances selected because of their high efficiency and high synergy:

Its unique formulation biostimulates all metabolic pathways involved in the activation of plant's natural defenses.

Starts and enhances the production of antimicrobial enzymes and natural phytoalexins specific to the treated crop, as well as the biosynthesis of reactive oxygen species (ROS) and the fortification of cell walls.

Teca™ TOTAL MAX acts systemically on the plant leading to the best overall protection of the treated crop.



Teca™ TOTAL MAX prevents infections when applied before the pathogenic attack and, once the disease has started, it helps to contain its advance and guarantee that the crop can fight it properly.

Teca™ TOTAL MAX, TOTAL assurance MAXIMUM protection.

IT IS A NEW TOOL TO INCORPORATE TO YOU PLANT PROTECTION PROGRAM

Teca™ TOTAL MAX has a unique combination of elicitors that activate all possible defense pathways of the plant, regardless of the pathogen.

ALL NATURAL



Natural defense mechanisms activation

Efficient in all kind of crops

Despite the fact that the immune system of each crop is highly complex and characteristic of the variety, Teca™ TOTAL MAX is specially designed to act in the common step of the defense mechanism route.

Specific action for each crop

Once Teca™ TOTAL MAX activates defense signal, the crop performance with its own defense mechanism (phytoalexines, genes, etc.).

Broad spectrum action

Are effective even against new or resistant (adapted) pathogens. Are effective even against not identified pathogen.



Technical data sheet:
Application via irrigation and / or foliar

3.3 % N

5.2 % K₂O

L-amino acids derived from plant protein hydrolysate

Seaweed extracts

Natural vegetable extracts

Product can be mixed with other fertilizers and phytosanitary products.

*These data are indicative and do not constitute a CoA



RESIDUE-FREE



No safety term



Can be used during the whole cycle without limit of applications



ECO Friendly



Product do not have phytosanitary activity

PREVENTION OF THE INFECTION

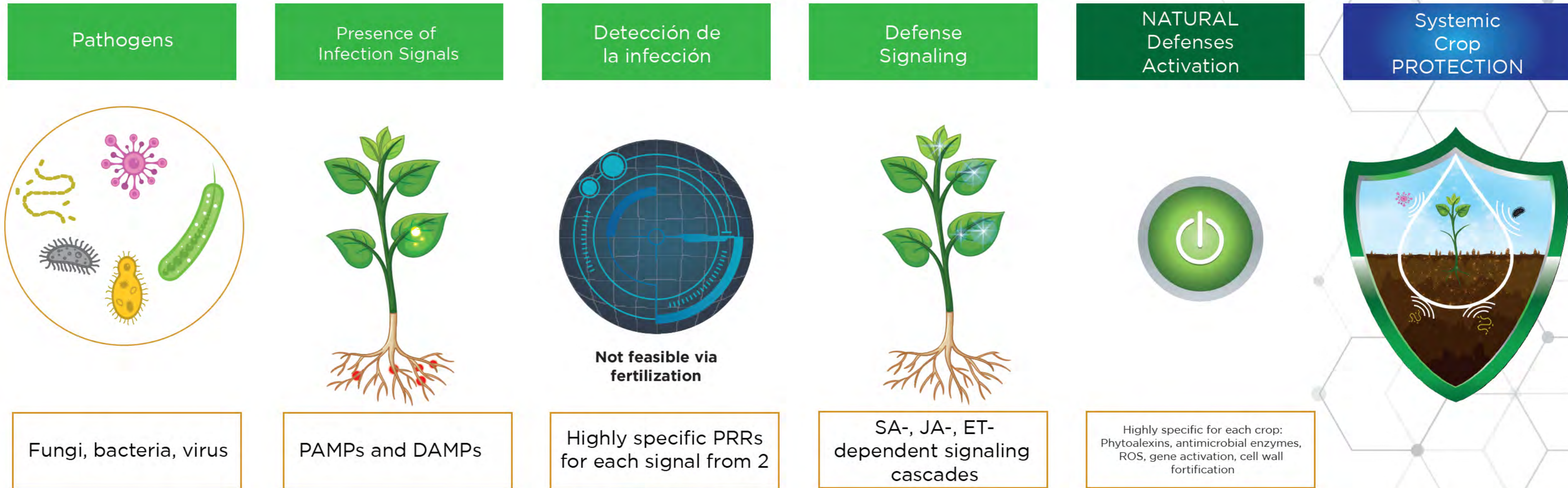
Self-Defence Inducer is applied before pathogen attack, triggering (starting up) innate natural defenses of the treated crop

INFECTION CONTAINMENT

Self-Defence Inducer is applied after pathogen attack, empowering the natural defense mechanisms

Performance of the crop defense mechanisms will be boosted, and the plant would defend itself using all its naturally available protection power. This would help to infection containment: Grupo Iñesta SDI effectively contains the disease by its own.

The science behind the product



1. Pathogens attack the plant.

2. Molecular patterns arise upon pathogen presence, i.e.:

- PAMP: parts/sites of the pathogen.
- DAMP: “scraps” produced through plant cell destruction.

3. The plant detects these molecular patterns by highly specific outer membrane proteins, PRRs.



Not feasible via fertilization

Highly specific PRRs for each signal from 2

4. Detection results in a systemic defense signaling cascades:

- Hormonal (SA, JA and ET).
- Non-hormonal (e.g., ROS and H₂O₂).

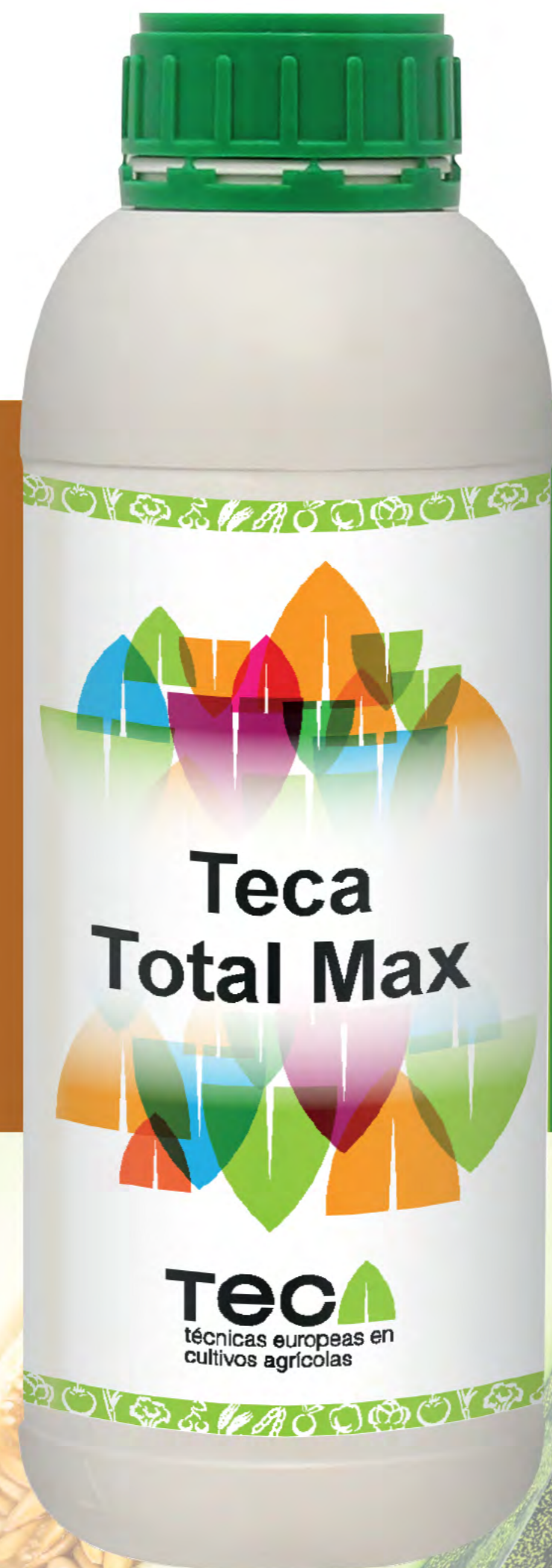
5. These cascades activate plant natural defenses. Some examples follow:

- Phytoalexins: Antibiotics synthesized by the plant upon pathogen attack. Every crop produces a specific one in the best possible concentration.
- Antimicrobial enzymes such as chitinase and glucanase.
- Production of oxygen reactive species (ROS) and H₂O₂.
- Increase in the cytosolic concentration of the secondary messenger Ca²⁺.
- Activation of different protein kinases.
- Induction of defense-related genes (e.g., NPR1).
- Cell wall fortifications to hamper pathogen incursion.

Trial Report


› Teca™ TOTAL MAX: PROVED EFFICIENCY

The experience accumulated in field trials during all these years and feedback from farmers experience during all these years, has allowed us to verify the improvement of our products and has provided us with specific knowledge of the uses and times of application of each of them, contrasted in different crops and climates



At Grupo Iñesta, we know what importance is showing the efficiency of our products by recognised researchers and universities. For this reason, at our arrival to USA, our team developed several trials with university professors and independent PCAs.

Teca™ TOTAL MAX has been tested in several crops like:

-  *Tomatoes*
-  *Turf*
-  *Lettuce*
-  *Almonds*

TRIAL 1

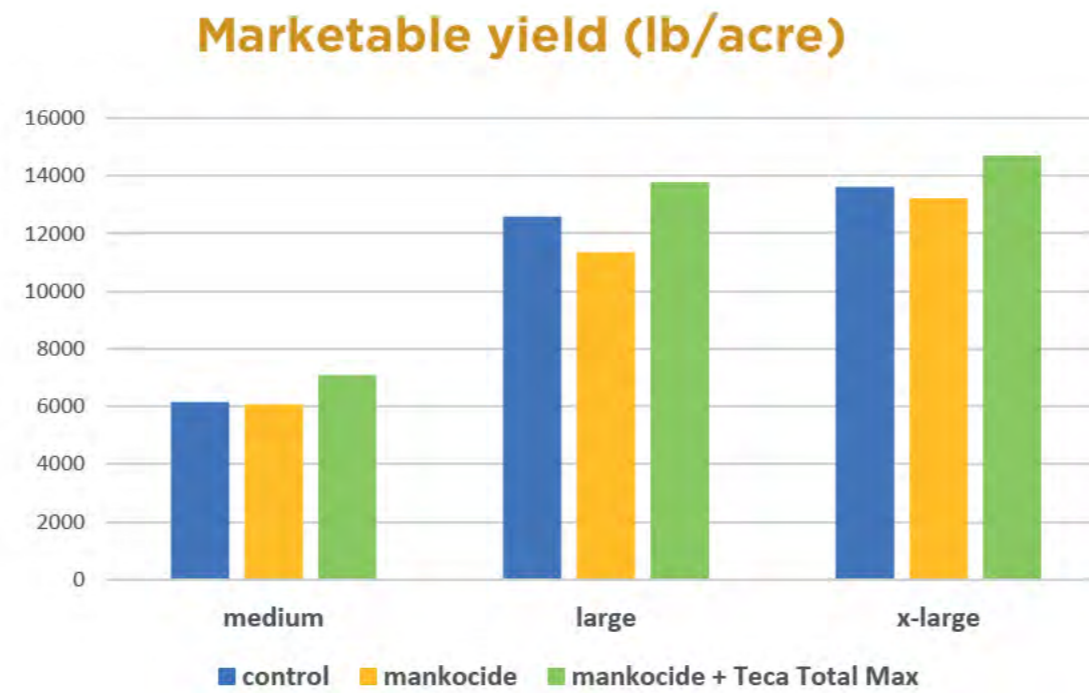
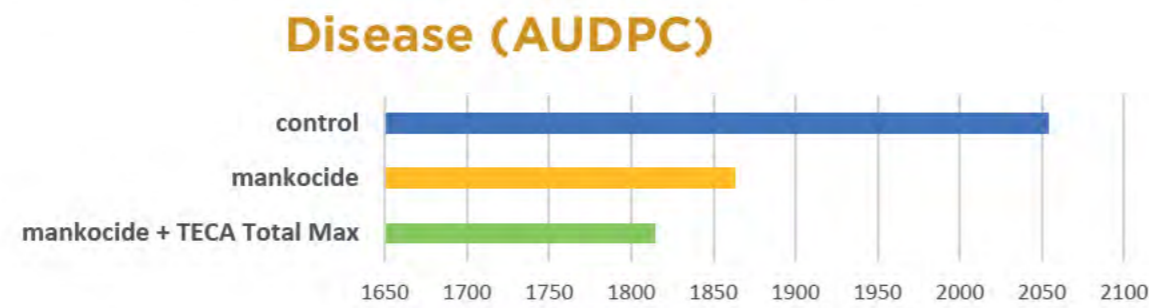
BACTERIAL SPOT (XANTHOMONAS PERFORANS)
Tomato

Control was treated following the farmer's best practices. Mankocide was treated weekly TECA was treated following the farmer's best practices plus foliar applications of Teca™ TOTAL MAX (weeks 1,3,5,7) alternated with Mankocide (weeks 2,4,6,8).

Teca™ TOTAL MAX activates defenses of tomato against bacteria



- ✓ The use of Teca™ TOTAL MAX showed the best protection of the trial.
- ✓ As product do not damage crop and infection was controlled, our program had the highest yield result of the trial.



TRIAL 2

SPRING DEAD SPOT, BIPOLARIS LEAF SPOT AND DOLLAR SPOT (SCLEROTINIA). Turf

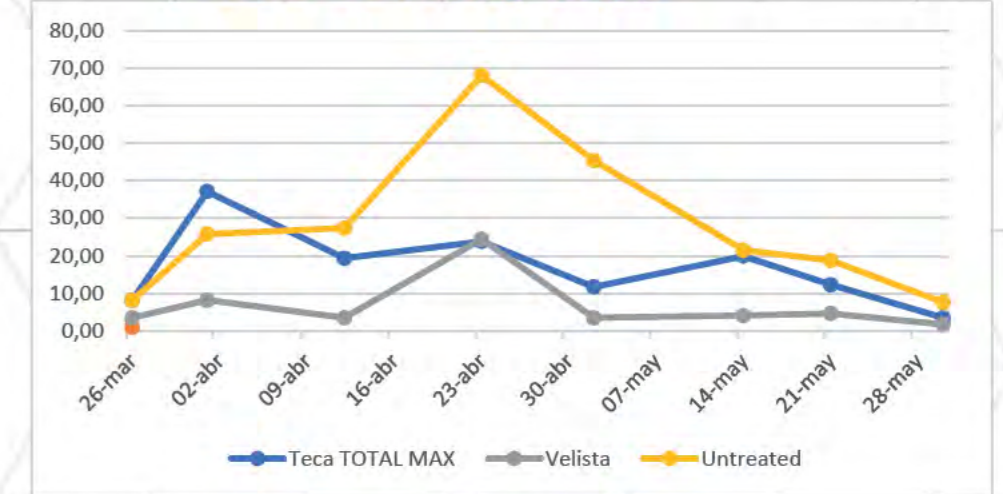
Control was treated was treated following the professor practices and with Velista as a fungicide. TECA was treated with several applications at rate 0.5 gal/acre.

Teca™ TOTAL MAX activates defenses of turf against fungus

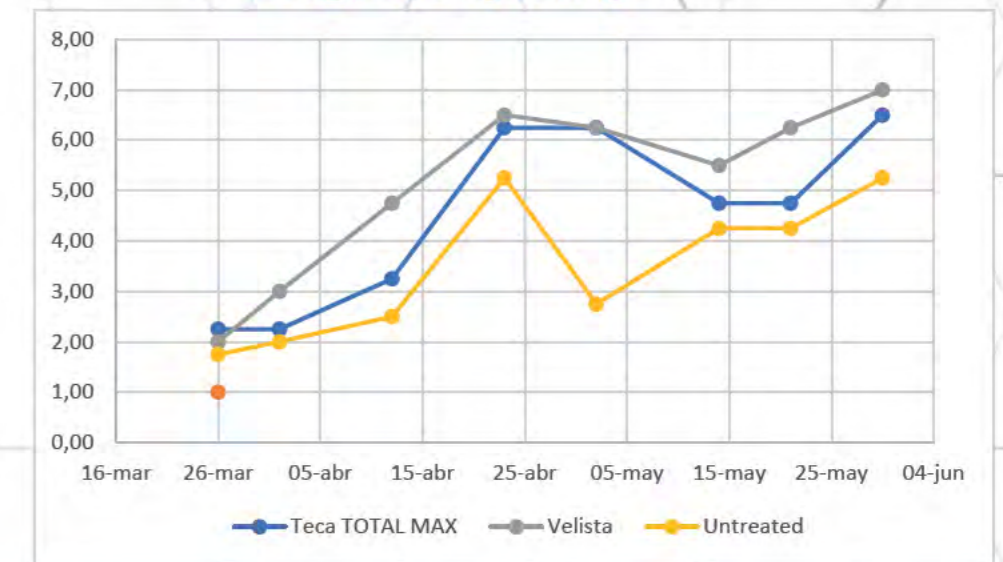


- ✓ At the maximum pressure point Teca™ TOTAL MAX performed as well as the fungicide.
- ✓ There were no significant differences of turfgrass quality against fungicide.

SDS Severity (%)z



Turfgrass quality



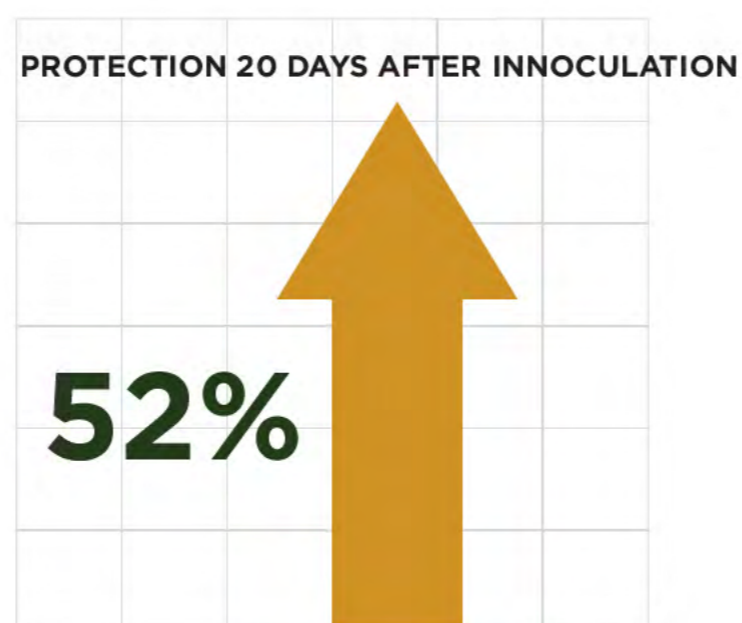
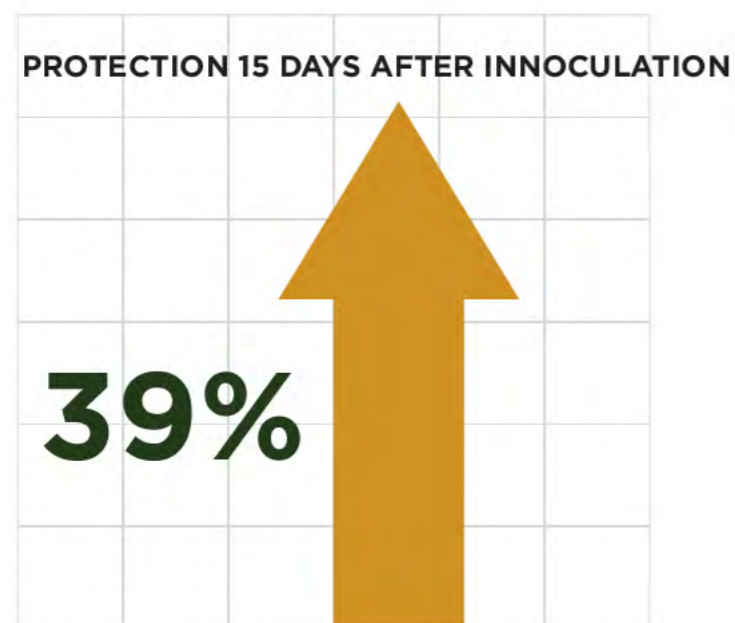
 Trial 3

SCLEROTINIA
Lettuce

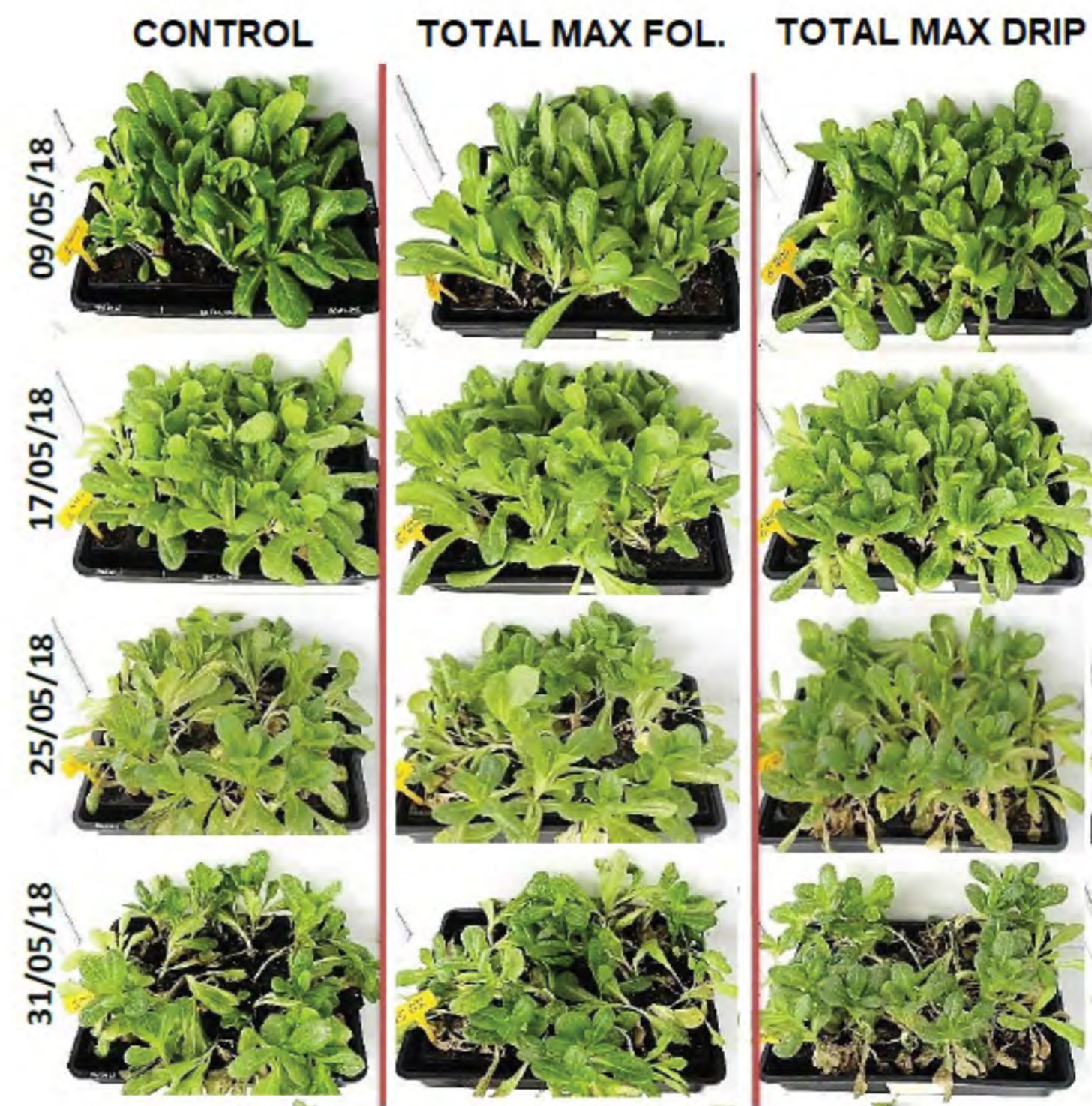
This trial was developed at company's growing chamber with the extreme conditions for sclerotinia development. There were two different treatments of **Teca™ TOTAL MAX** to show that product works systemic.

+HEALTH

-FUNGUS
(VS CONTROL)



- ✓ The use of **Teca™ TOTAL MAX** showed the best protection of the trial and improvement of protection against control in the period of 20 days.
- ✓ **Teca™ TOTAL MAX** is a good alternative to protect plants against fungus.
- ✓ **Teca™ TOTAL MAX** showed good results applied by drip and by foliar, confirming its systemic performance.





grupolñesta

metragro



Ctra. Novelda - La Romana, Km. 2

03660 Novelda (Alicante)

Tel. +34 96 560 15 11

contact@grupoinesta.com

www.grupoinesta.com

