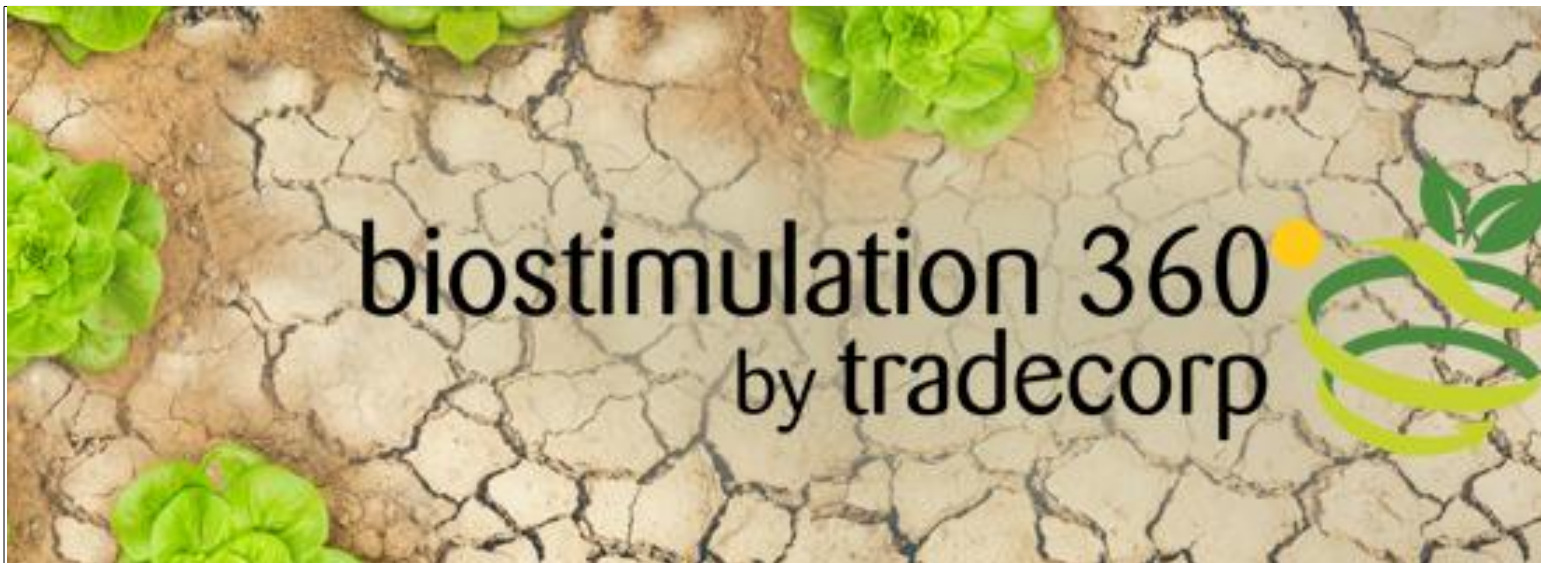




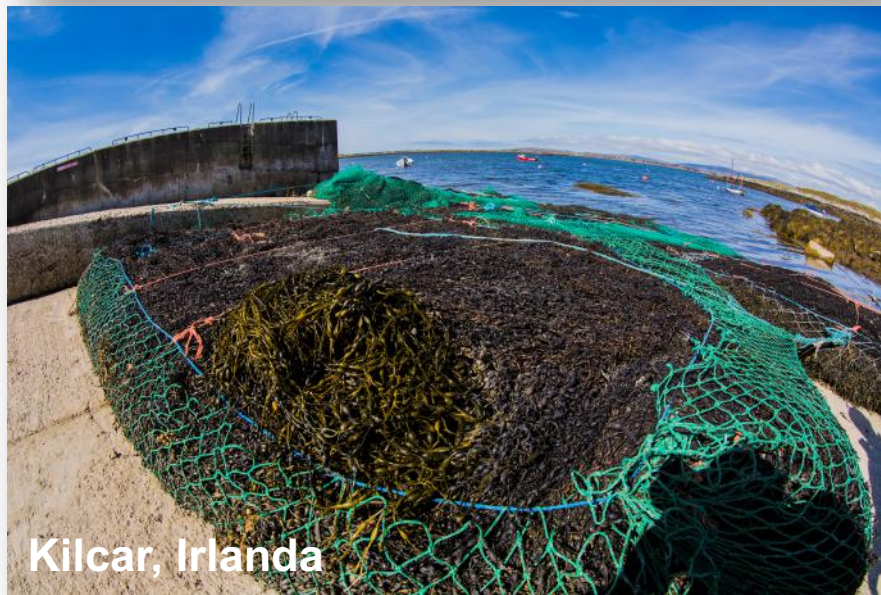
**Vincenzo De Girolamo**  
Area Manager  
Tradecorp Italy & South East Europe

# Tradecorp: storia ed evoluzione



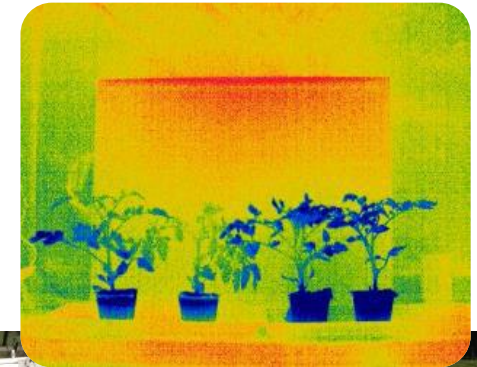


# Tradecorp: siti produttivi nel mondo





# Tardecorp: R&D e il futuro dei Biostimolanti



## Associated research institutions:



# Phylgreen: Tradecorp e Queen's University Belfast

Received: 10 March 2018

Revised: 21 November 2018

Accepted: 26 November 2018

DOI: 10.1111/aab.12482



WILEY Annals of Applied Biology

## RESEARCH ARTICLE

# Biostimulants enhance growth and drought tolerance in *Arabidopsis thaliana* and exhibit chemical priming action

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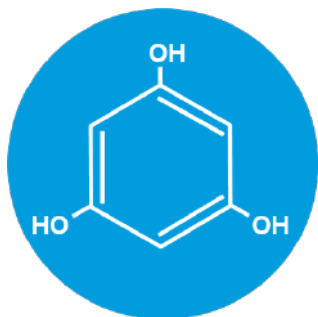
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The usage of biostimulants in agriculture has been steadily increasing in recent years, and their benefits have been recognised by growers. The growing interest from industry has led to a boom in the number of products on the market, many of which are derived from a diverse range of sources such as microbials, plant extracts, hydrolysed amino acids and algal extracts. However, there has been a slower recognition of the biostimulant sector by the scientific community. This has been a result of limited fundamental research into the modes of action of many biostimulant products and the speed at which new multi-compound products have entered the market. In this study, we have developed a readily reproducible bioassay using the model plant *Arabidopsis thaliana* to test biostimulant efficacy under drought conditions and assess any chemical priming action. We have screened three products with biostimulant action derived from amino acids (Delfan Plus), *Ascophyllum nodosum* extract (Phylgreen) or potassium phosphite (Trafos K). Under a progressive soil drought condition, we measured changes in plant growth, biochemical content and gene expression levels. Our results demonstrated biostimulant-mediated drought tolerance, with the products requiring different application timings for successful stress mitigation. The analysis of the biochemical and gene expression changes provided evidence of chemical priming action when plants were pre-treated with biostimulants prior to the drought stress exposure.

### KEYWORDS

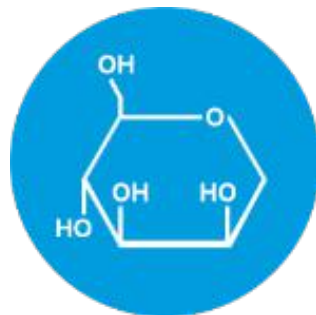
abiotic stress, *Arabidopsis thaliana*, biostimulant, chemical priming, drought, gene expression, stress response

# Phylgreen: i componenti essenziali

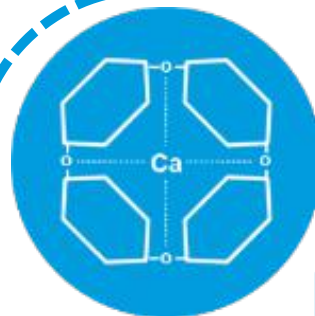


Polifenoli  
e antiossidanti

Mannitolo



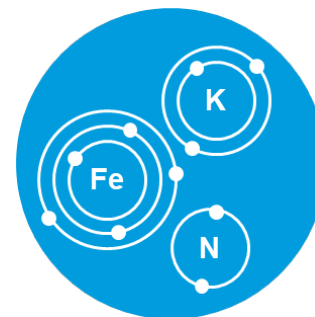
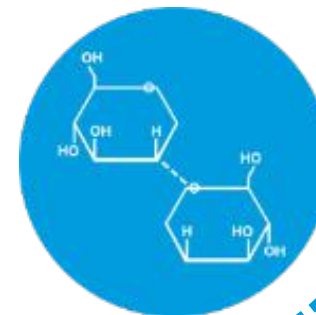
Pigmenti,  
vitamine e  
metaboliti  
secondari



Alginati

*Polisaccaridi in  
Ascophyllum nodosum*

Polisaccaridi  
strutturali e di riserva  
(laminarine e fucoidani)



Elementi minerali

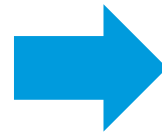


La combinazione della **migliore materia** prima e  
del **metodo di estrazione naturale** e innovativo

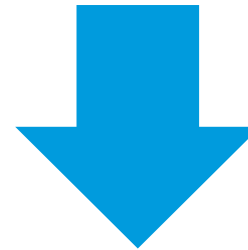


*Ascophyllum  
nodosum*

+



phylgreen® 



**bio**   
agricoltura biologica

primactive   
effect

# Primactive Effect: cosa avviene nella pianta

## 1. Stimolo interno

Primactive Effect causa un piccolo shock.

## 2. Stress ossidativo locale

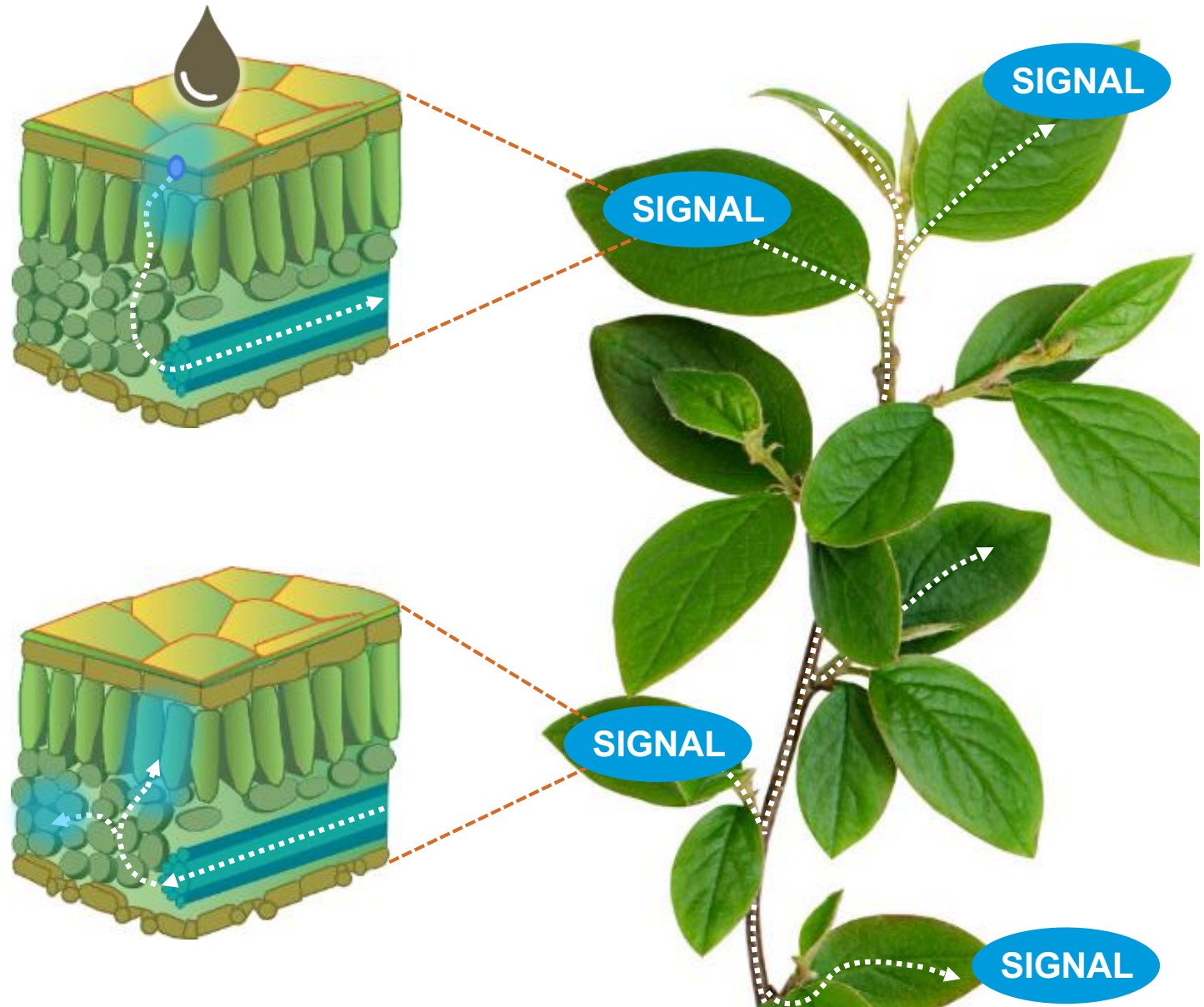
Segnale di risposta “ormonale” della pianta.

## 3. Segnalazione interna

Attivazione vascolare interna alla pianta.

## 4. Si attiva un “biomemory effect”

Il segnale memorizzato nei tessuti favorisce la risposta agli stress, aumentando il metabolismo e le risposte fisiologiche.





# Regolazione della evapotranspirazione: fattore chiave

0 ore

Nessuno stress e nessuna differenza



# Regolazione della evapotranspirazione: fattore chiave

36 ore

**Stress Idrico** (primi sintomi sul non trattato)





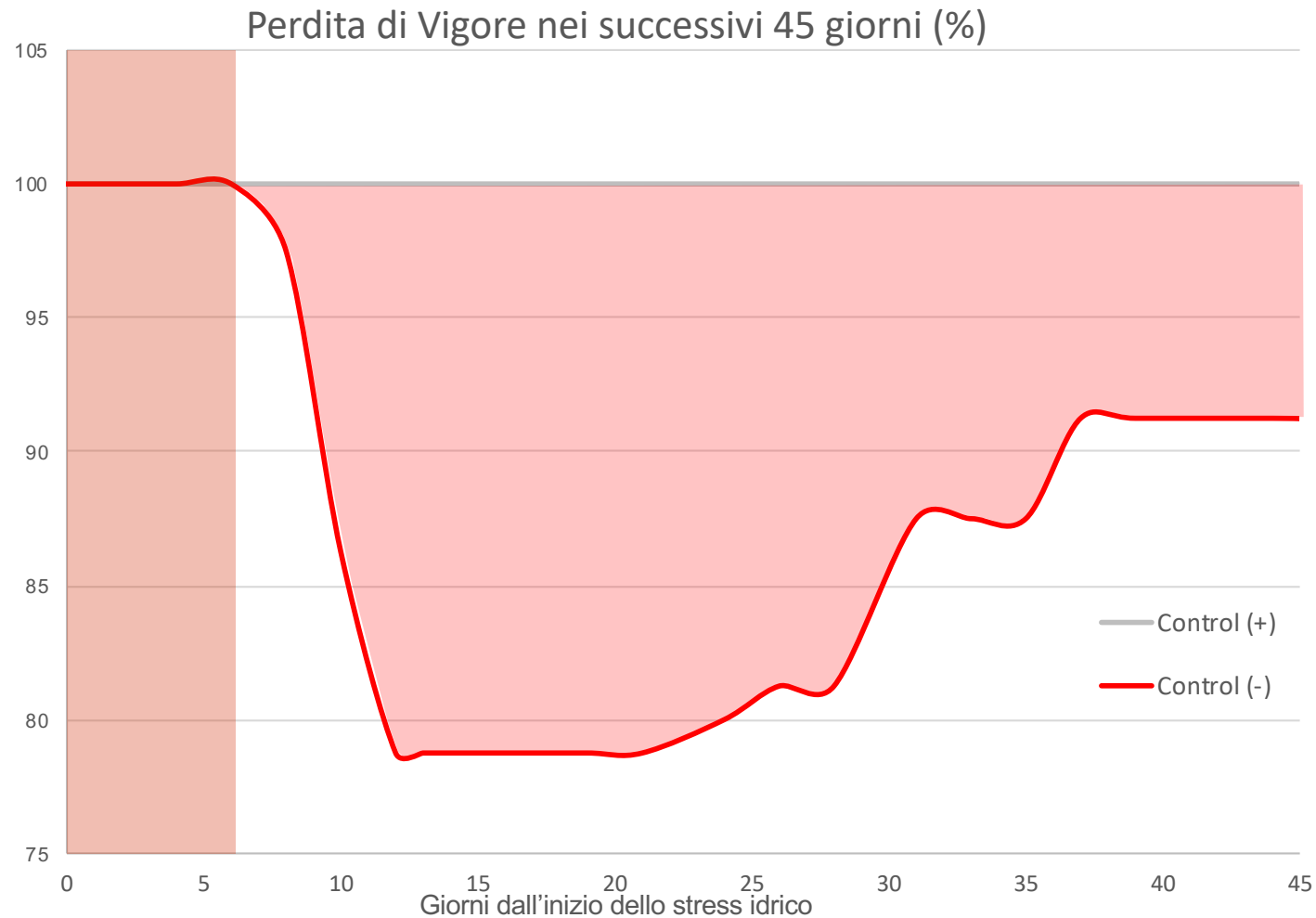
# Regolazione della evapotranspirazione: fattore chiave

7 giorni

Senescenza (Phylgreen ne ritarda gli effetti)

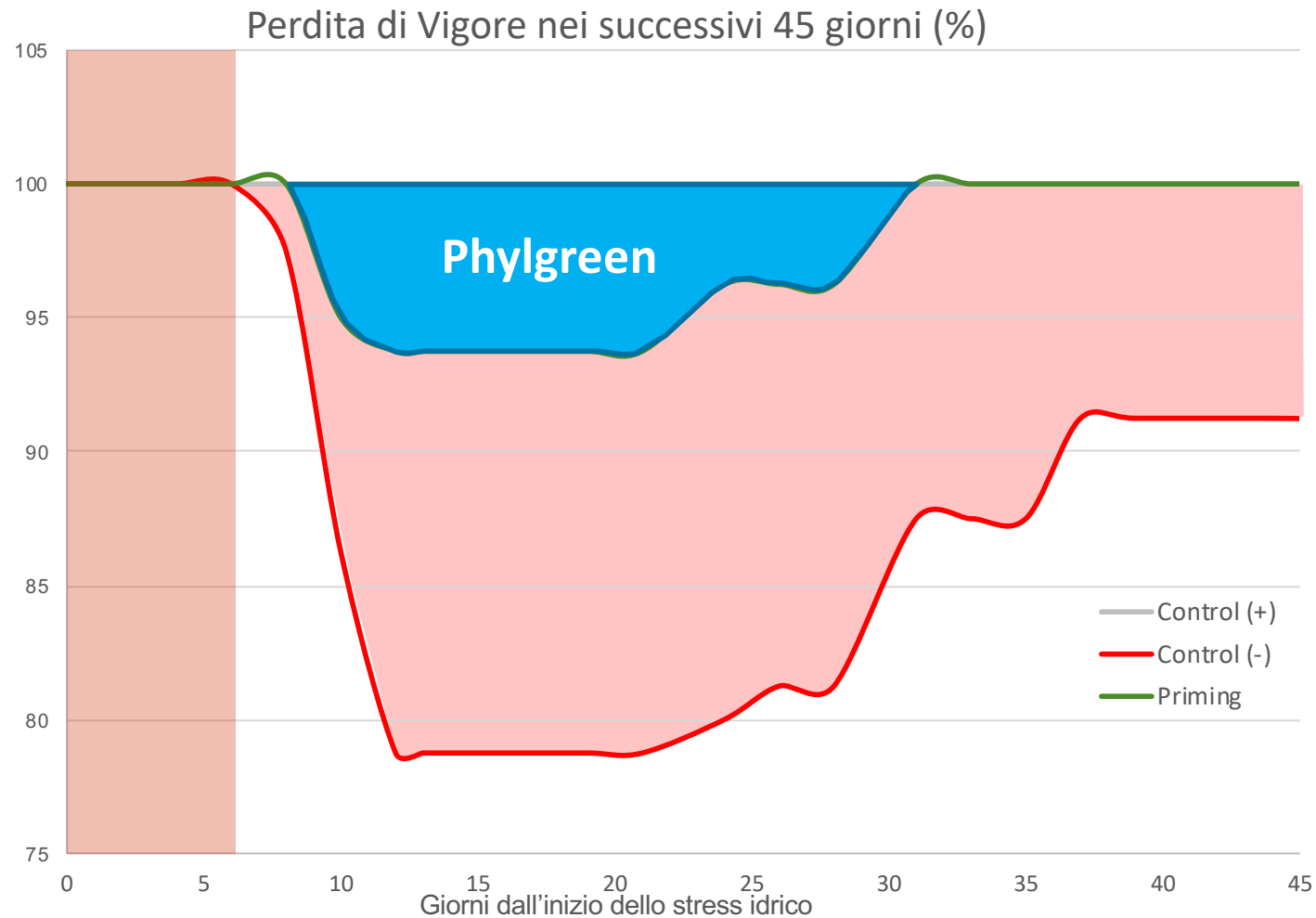


# Vigoria delle piante con Primactive Effect





# Vigoria delle piante con Primactive Effect



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