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The PHYTOSTIM Project (2021-2025): Toward an integrative Analysis of Phytostimulant Mode of Action and Acceptance

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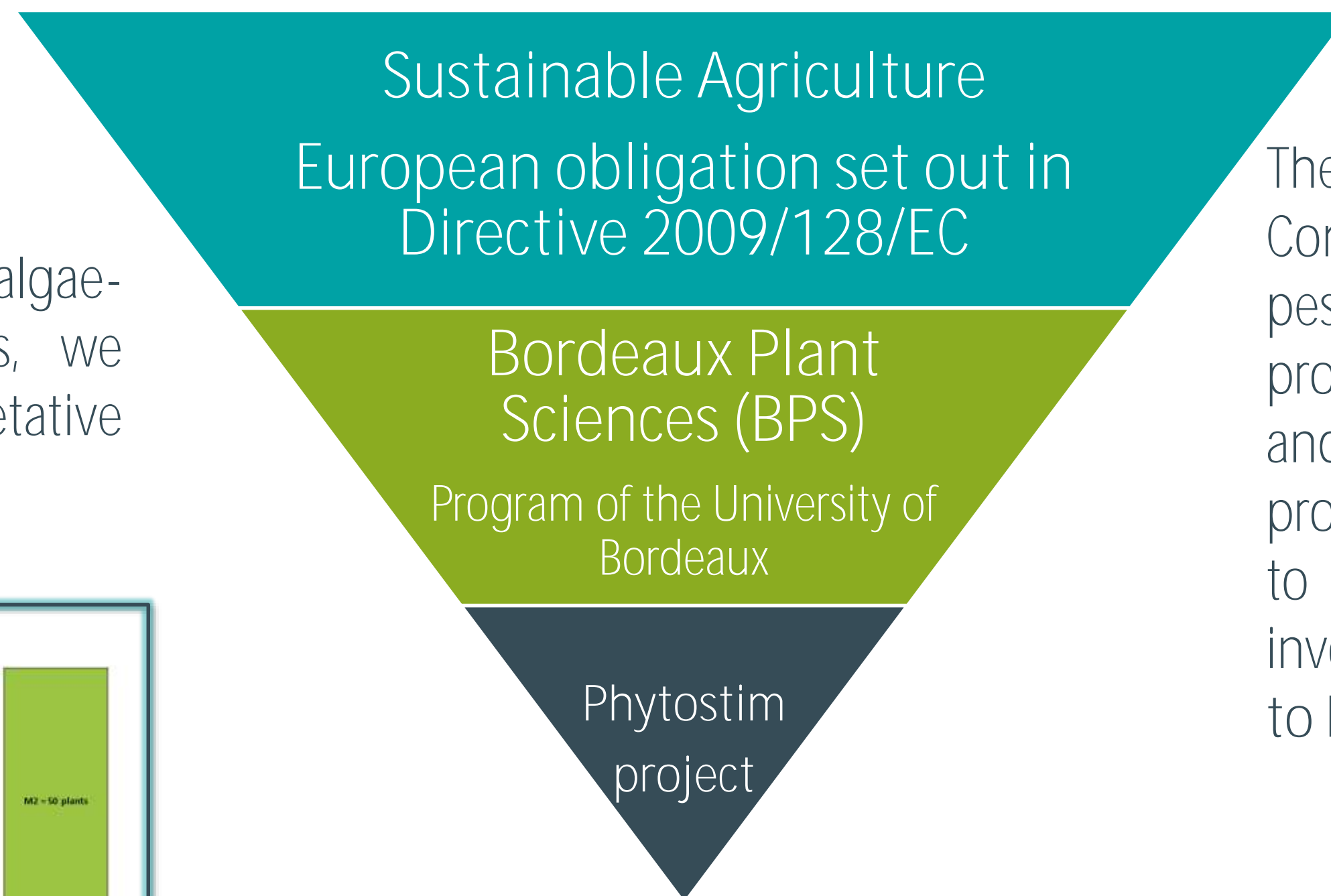
UMR/1332 Biologie du Fruit et Pathologie
UMR/5113 GREThA
ASTREDHOR Sud-Ouest

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Introduction

The aim of this study was to characterize the effect of an algae-based biostimulant on tomato production. For this, we investigated the plant development (root system, vegetative and reproductive part)

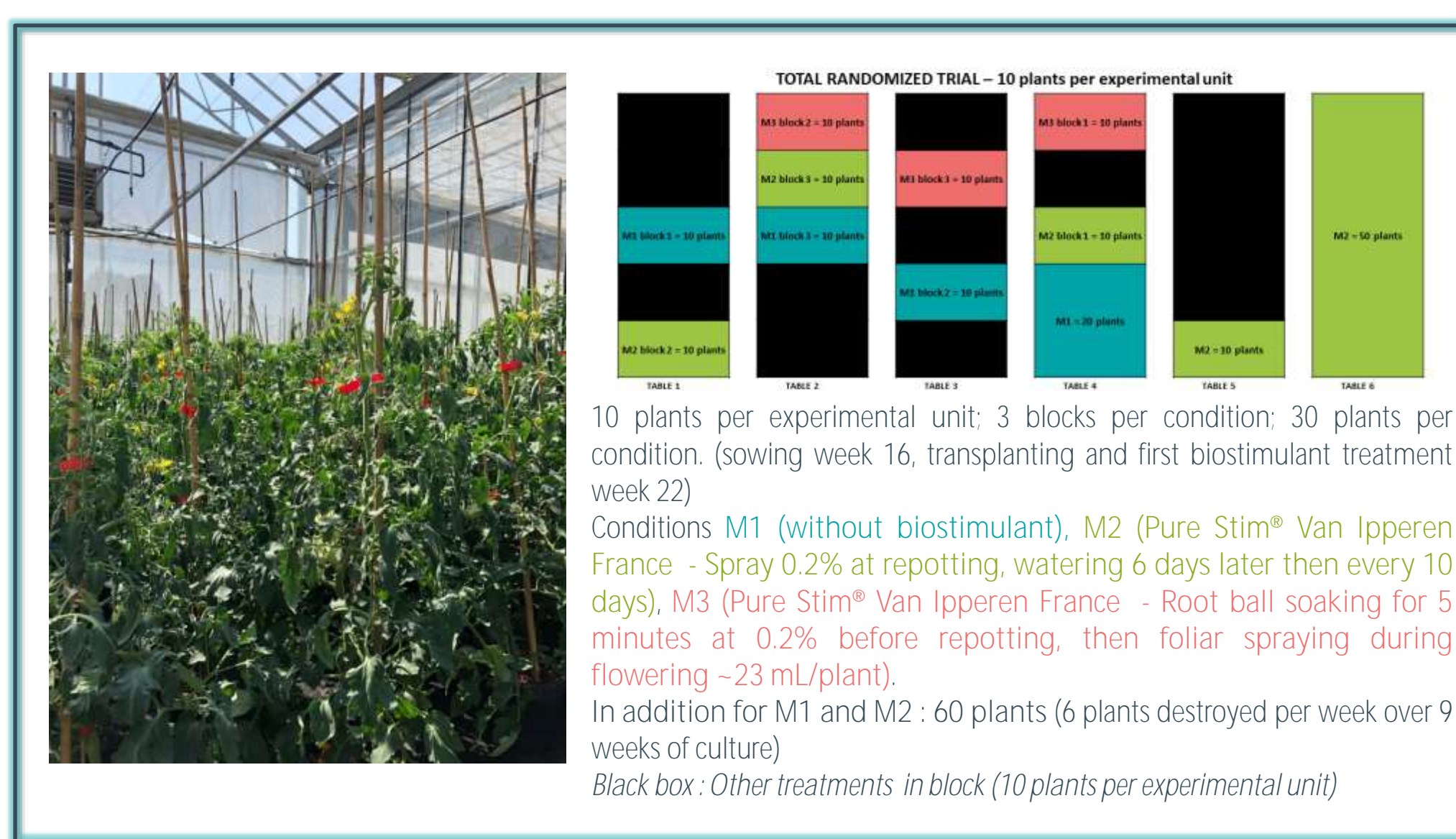


Background

The Regulation (EU) 2019/1009 is a framework for Community action to achieve a sustainable use of pesticides. Biostimulant and biocontrol use is full of promises for a less impacting agriculture on human health and the environment. The PHYTOSTIM project is part of BPS program of the University of Bordeaux, whose ambition is to better understand and regulate the mechanisms involved in the trade-offs between yield and resistance to biotic and abiotic stress of crops.

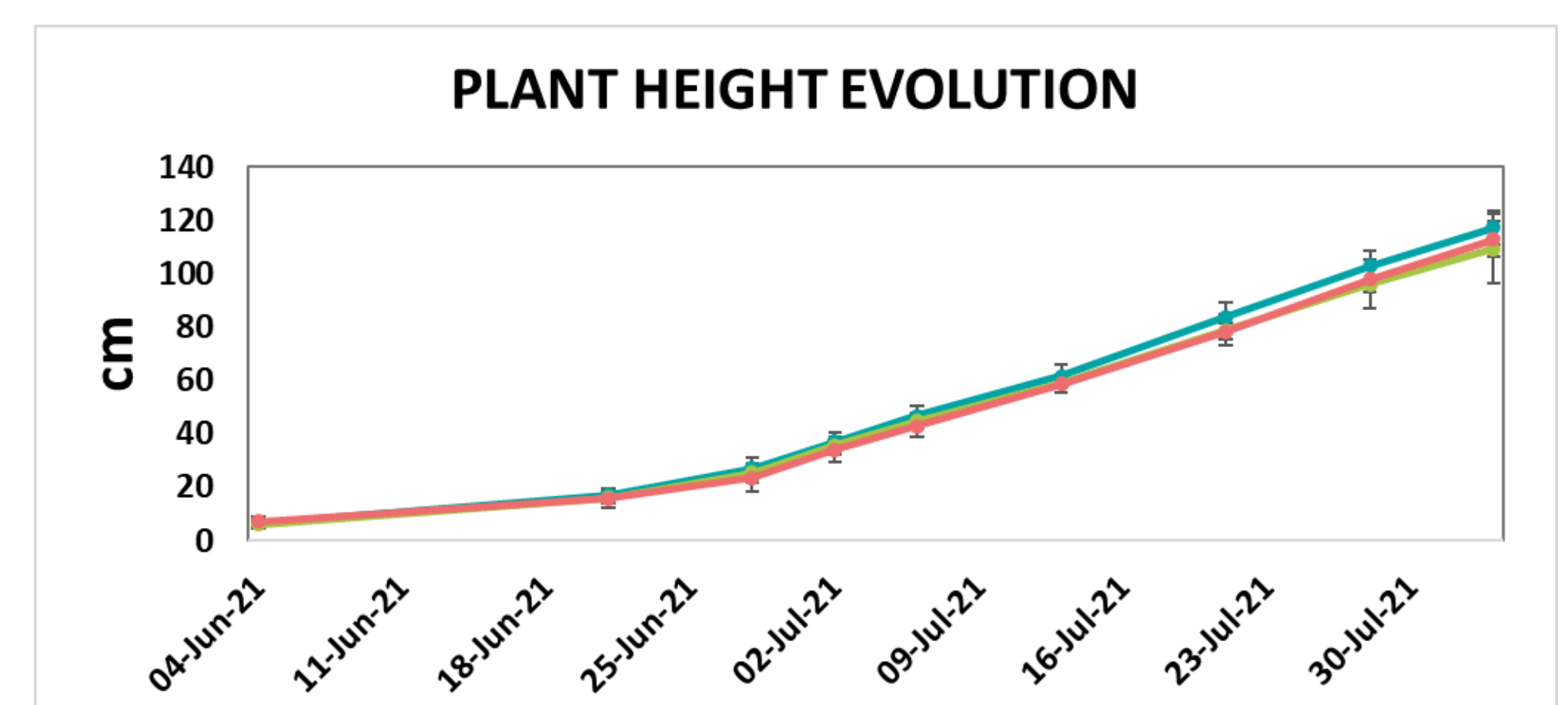
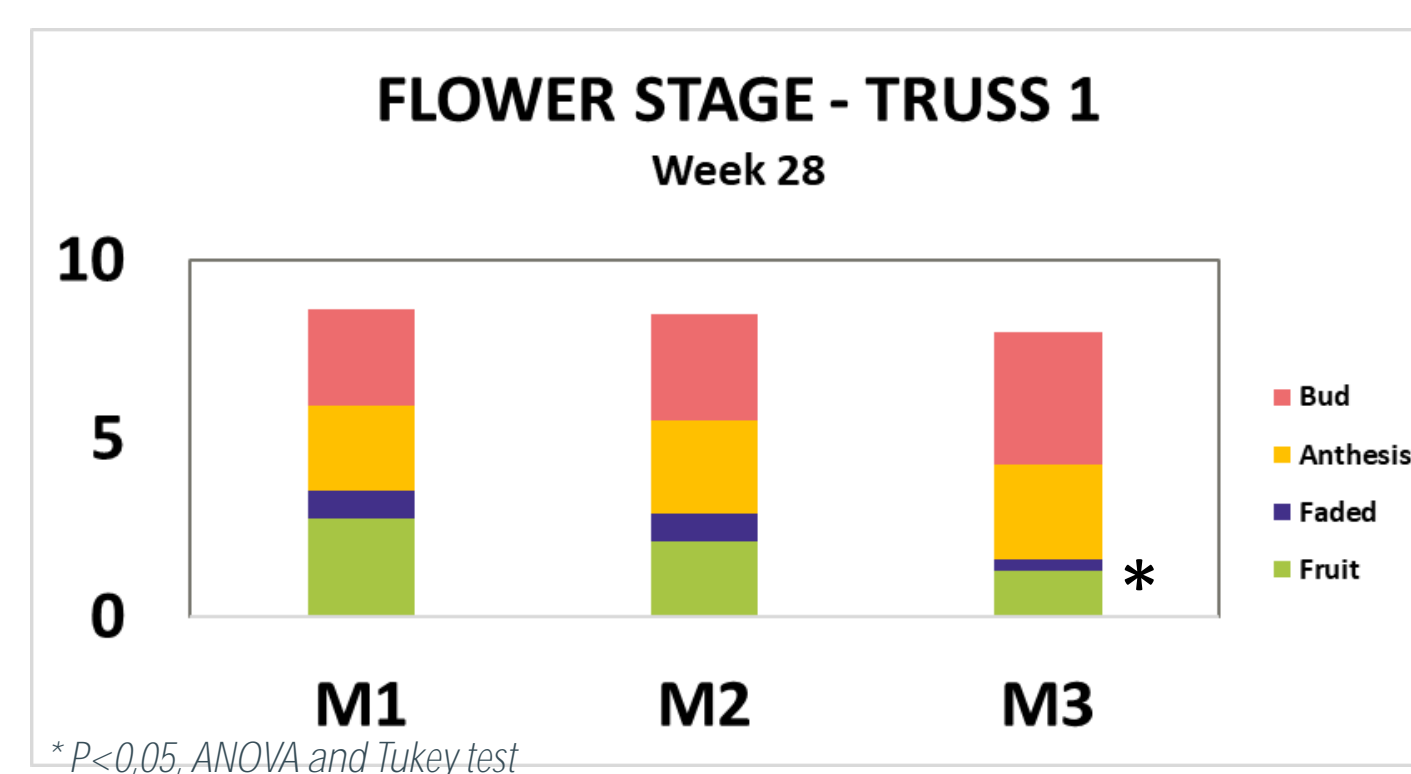
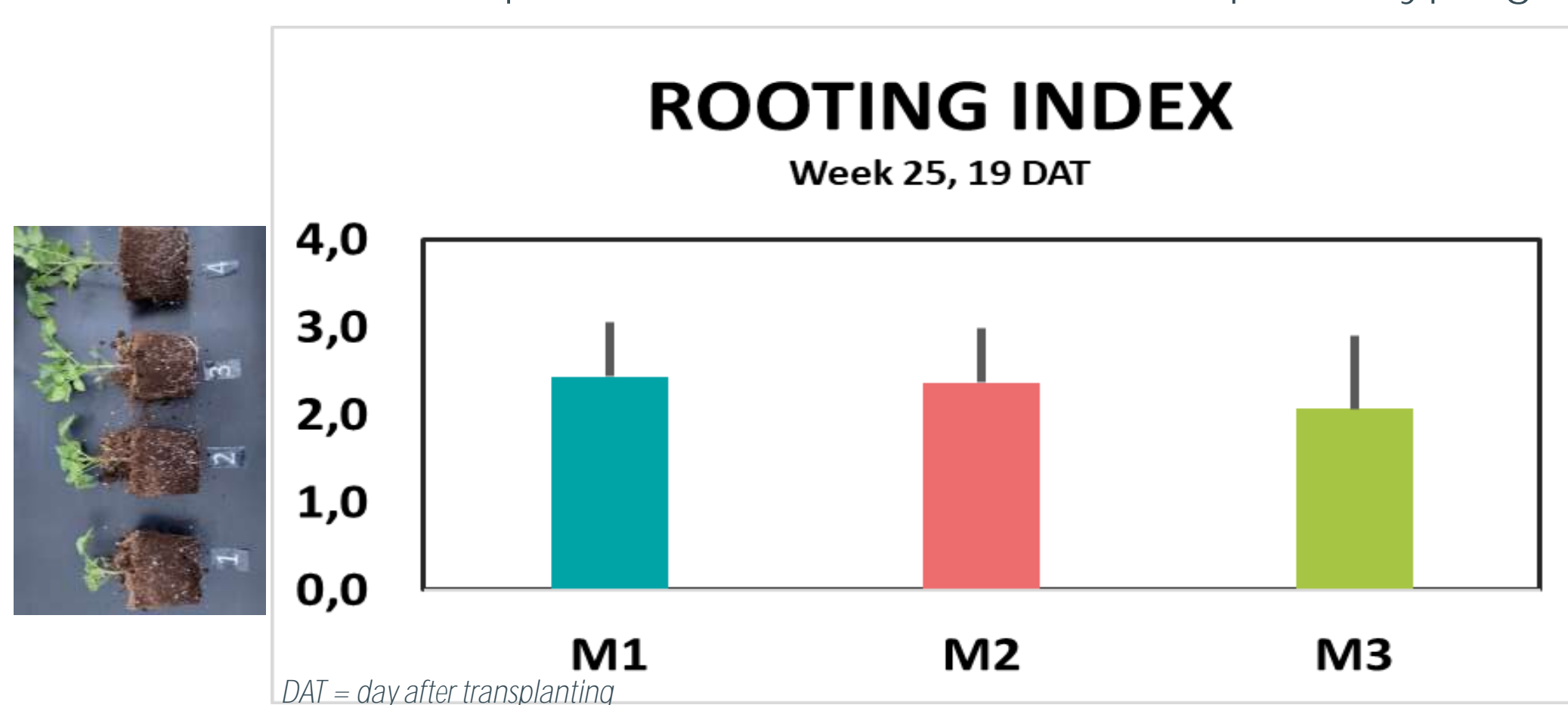
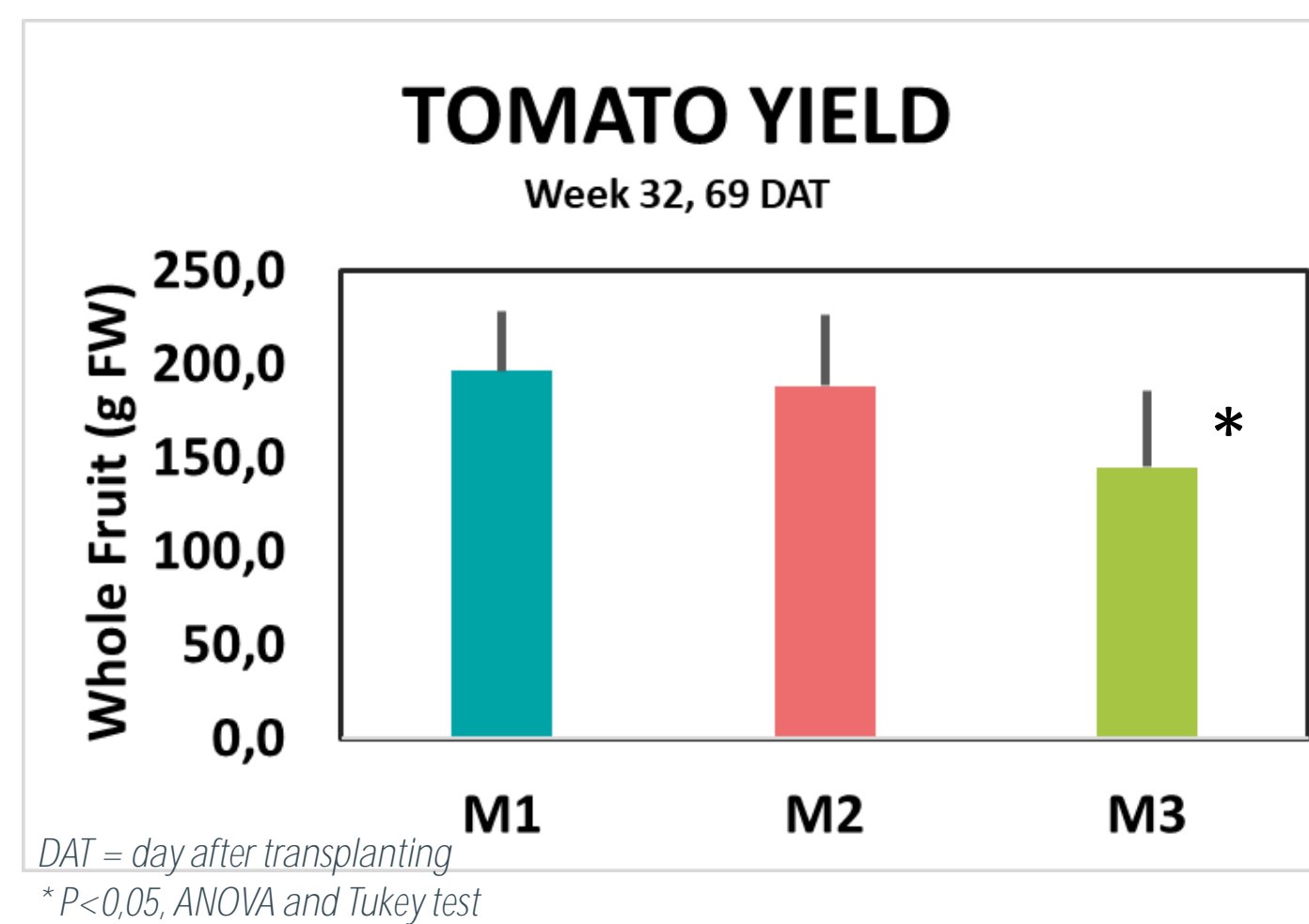
Results & Discussion

Here we present a part of the results available for this study of the effect of biostimulant application on tomato under conditions of production (without any stress in summer 2021). The application of biostimulant specified by the supplier (M2) did not confer any benefit in comparison with the control (M1) for the development of the root system and the vegetative part. We noticed a slight drop in reproductive performance of the fruit production when the biostimulant was applied by root ball soaking at the time of transplantation and a slightly higher variability of the rooting index.



Methodology

- ✓ Summer 2021, ASTREDHOR SO greenhouse
- ✓ 210 tomato plants (cultivar M82)
- ✓ Application of Stim Pure Liquid® (2 types, M2 & M3)
- ✓ Descriptors statement during 9 weeks: plant growth, rooting index, fruit yield...
- ✓ Leaf and fruit samples collection for biochemical phenotyping



Conclusion & Perspective

The descriptors presented here do not allow to predict the effect of the biostimulant on tomato plant. The perspective is to study the biomass composition of the leaves and fruit via non-targeted metabolomics (Near-infrared spectroscopy analysis in progress).



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