

# Giulia Antonucci



KEY-WORDS:  
**STRESS PHYSIOLOGY · GAS  
 EXCHANGE · BIOSTIMULANTS**

## PROFILE

Third-year PhD student  
 in Agronomy specialized in stress  
 physiology and biostimulant testing.

## AFFILIATION

Department of Sustainable Crop  
 Production (DIPROVES),  
 Università Cattolica del Sacro Cuore

## LANGUAGES



Mother tongue



Level C1



Level B1



Level B1



Level A2

## HOW TO REACH ME

Email Address:  
[giulia.antonucci@unicatt.it](mailto:giulia.antonucci@unicatt.it)

## Reference Contact

Prof. S. Amaducci

## PROJECT TITLE

**Methods for biostimulant testing: high-throughput phenotyping of influence on plant stress response**

## Steps of the research

- Greenhouse trials on the efficacy of vegetal biostimulants on drought stress via quantification of gas exchange (high-throughput acquisition).
- Field trials on the efficacy of remote image acquisition (via drone/satellite), together with PROSAIL model inversion.
- Identification of data handling methods for high throughput data, both physiological and image-based.

## Main Results

The results from the greenhouse trials confirmed a higher photosynthetic efficiency of the treated plants, which is correlated to biostimulant-mediated drought tolerance. Furthermore, metabolomic analyses demonstrated the priming effect of the biostimulant for stress tolerance and detoxification and stabilization of photosynthetic machinery.

## Research Contribution

When validated, this research would allow an advancement in correct data analysis of high-throughput time series. Therefore, the biostimulant (glycinebetaine) dynamic action will be more thoroughly described. The final outcome of the validation of the biostimulant effects will be higher accuracy in the use of the product, resulting in a higher efficiency.

## Collaborations

RAUN/UNIDO 2019-2020

## Why should you care?

If biostimulants can stabilize photosynthesis in a water stress scenario then this will help reduce water use. This would prove crucial to enhancing the sustainability of agricultural practices as irrigation accounts for 70% of worldwide water use. By doing this, we will increase agricultural production, thereby increasing food security.