VARIATIONS IN BIOSTIMULANT RESPONSE ACCORDING TO PLANT SPECIES: THE CASE OF *ARTHROSPIRA* AND *NOSTOC*-BASED FORMULATIONS

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ABSTRACT

Cyanobacteria are receiving increasing interest in the scientific community and the agrochemical industry as a new biological source of plant biostimulants capable of improving yields and quality of agricultural and ornamental crops. However, the biostimulant effects may vary according to plant species as different plants may have different sensitivity and/or different abilities to absorb and transport the bioactive molecules contained in the product. In addition, the cultivation conditions can vary the responses of the plant to a biostimulant product.
In this work, data obtained in several trials performed over three years of experimentation are presented and differences in plant responses to treatments investigated. In particular, extracts and hydrolysates obtained from the same *Arthrospira* sp. and *Nostoc* sp. biomasses were applied by foliar spraying on different plant species of great agronomic interest in Italy.
Growth trials show that the effectiveness of the same microalgae-based biostimulant varies in relation to the plant species and can be enhanced in plants subjected to abiotic stress. In fact, the *Nostoc*-based formulation significantly increased the yield and root development in basil plants, but had no effects on tomato plants, while the *Arthrospira*-based formulations were more effective when applied on stressed tomato plants than on basil.
Our results highlight that the study on the application of a biostimulant on different plant species and conditions is crucial to ensure the credibility of a new product on the market.

Keywords
Biostimulant, *Arthrospira*, *Nostoc*

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