



Abstract

# Effects of Plant-Based Biostimulants, Used Alone or in Combination, on Yield and Quality of Rocket Plants <sup>†</sup>

Maria Giordano

Department of Agricultural Sciences, University of Naples Federico II, 80055 Portici, Italy;  
mariamosciano10@gmail.com or maria.giordano@unina.it

<sup>†</sup> Presented at the 2nd International Electronic Conference on Plant Sciences—10th Anniversary of Journal Plants, 1–15 December 2021; Available online: <https://iecps2021.sciforum.net/>.

**Abstract:** The climatic conditions over the last few decades were estimated to be the warmest of any previous decade using the Intergovernmental Panel on Climate Change (IPCC). Climate change refers to anomalous, intense, and catastrophic climatic events directly linked to an increase in temperature on Earth. These include hurricanes, floods, melting glaciers, etc. In this context, agriculture is subject to strong abiotic stresses that compromise food safety. It is therefore necessary to resort to agricultural practices that reduce the impact of agriculture on the environment and guarantee crop production. An important answer to this problem comes from the use of biostimulants in agriculture. These are microorganisms and molecules of natural origin able to increase fertilizer effectiveness by limiting their use. In this study, two different plant-based biostimulants were used alone and in combination to test their effectiveness on production, mineral content, and some quality parameters of greenhouse-grown rocket plants. Biostimulant treatments showed an average increase of 48.1% in the total yield and of 37.2% in the dry biomass of the plants compared with control plants without significant differences among treatments. Increases in chlorophyll, calcium, magnesium, and potassium were also detected in the presence of the two biostimulants. The vitamin C content increased compared with the control when the two biostimulants were combined. This study focused on biostimulants as eco-sustainable products able to increase the yield and quality of crops such as rocket plants.

**Keywords:** plant biostimulants; eco-friendly practices; vitamin C; minerals; synergistic interactions



**Citation:** Giordano, M. Effects of Plant-Based Biostimulants, Used Alone or in Combination, on Yield and Quality of Rocket Plants. *Biol. Life Sci. Forum* **2021**, *11*, 78. <https://doi.org/10.3390/IECPS2021-11997>

Academic Editors: Feibo Wu and Carmen Arena

Published: 1 December 2021



**Copyright:** © 2021 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

**Supplementary Materials:** The poster presentation can be downloaded at: <https://www.mdpi.com/article/10.3390/IECPS2021-11997/s1>.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Not applicable.

**Conflicts of Interest:** The author declares no conflict of interest.

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.