



Abstract

Effects of Plant-Based Biostimulants, Used Alone or in Combination, on Yield and Quality of Rocket Plants [†]

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Abstract: The climatic conditions over the last few decades were estimated by the Intergovernmental Panel on Climate Change (IPCC) to be the warmest of any previous decade. Climate change refers to anomalous, intense, and catastrophic climatic events directly linked to the increase in temperature on Earth. These are 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 crops 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 fertilizers 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% of the total yield and 37.2% of dry biomass of the plants, compared to control plants, without significant differences among treatments. An increase in chlorophyll, calcium, magnesium, and potassium was detected in the presence of the two biostimulants, too. Vitamin C content increased, as compared to 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 such crops as rocket.

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