

## Effect of Foliar Biostimulants on Yield and Quality of "Pizzutello" Tomato Sicilian Landrace Cultivated Without Irrigation

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### INTRODUCTION & AIM

The use of biostimulants in agriculture sector represent a sustainable and efficient technology to improve resource use efficiency, securing crop and yield stability. Since biostimulants may boost vegetative growth, enhancing plant tolerance to biotic and abiotic distresses, the application of microbial and non-microbial plant biostimulants has rapidly expanded. In Italy, especially in southern regions, long-storage tomato genotypes, such as Pizzutello di Sciacca and Locale di Salina, characterized by drought resistance, were selected. In this study, the effect of foliar application of different biostimulants on the productive and qualitative parameters of a local tomato landrace "Pizzutello" cultivated in Sicily without irrigation was evaluated.

### METHOD

**Duration of the study:** 2021-2022.

**Test site:** Marsala (TP) Sicily, 125 m s.l.m. (37°81'36" N, 12°55'20" E).

**Planting distances:** 3 m x 1 m.

**Experimental design:** randomized block design three replications.

**Foliar treatments:**

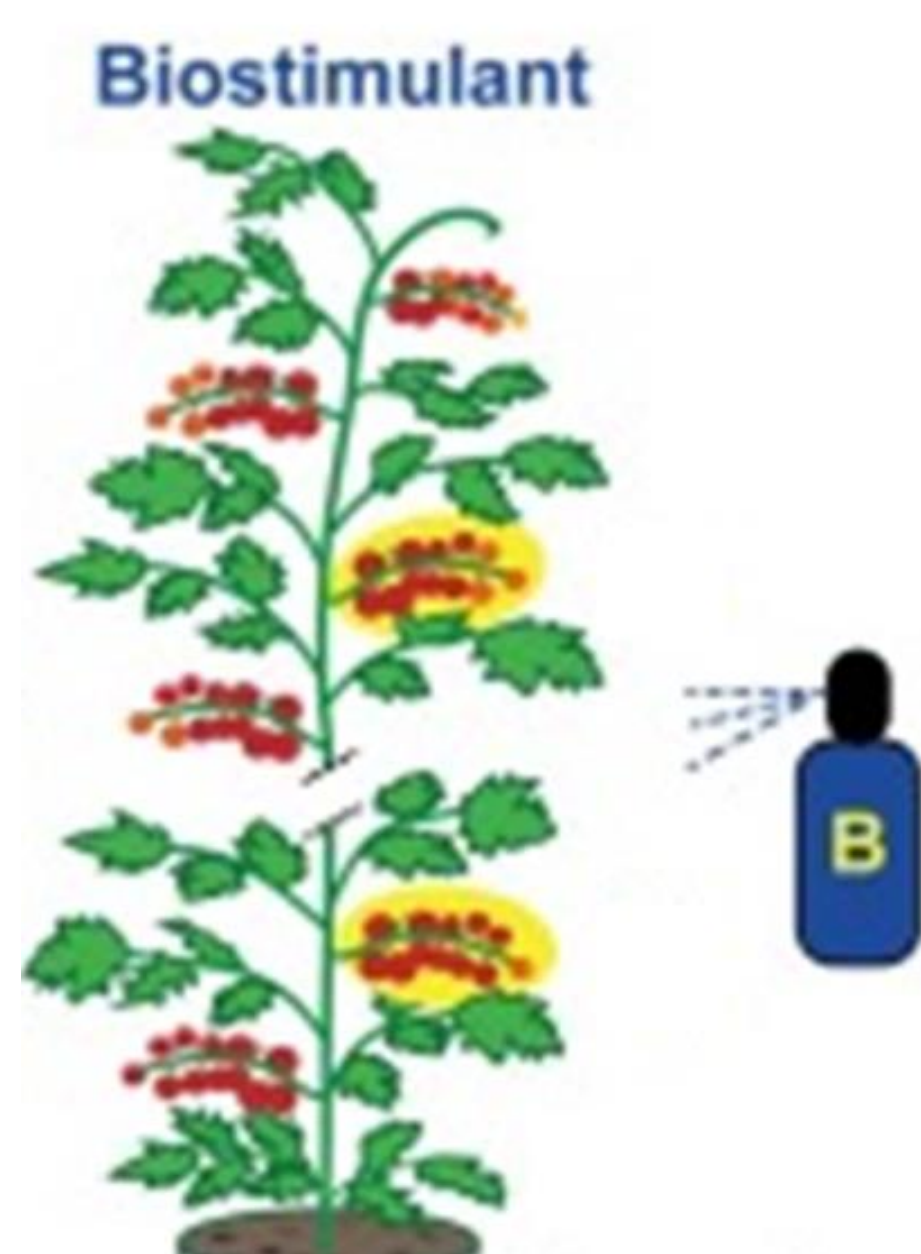
- B0: Control (only water),
- B1: Betaine,
- B2: *Ecklonia Maxima*,
- B3: *Ascophyllum Nodosum*,
- B4: Animal protein hydrolysate,
- B5: Vegetable protein hydrolysate.

**Numbers of treatments:** 4

**Frequency:** 2 weeks

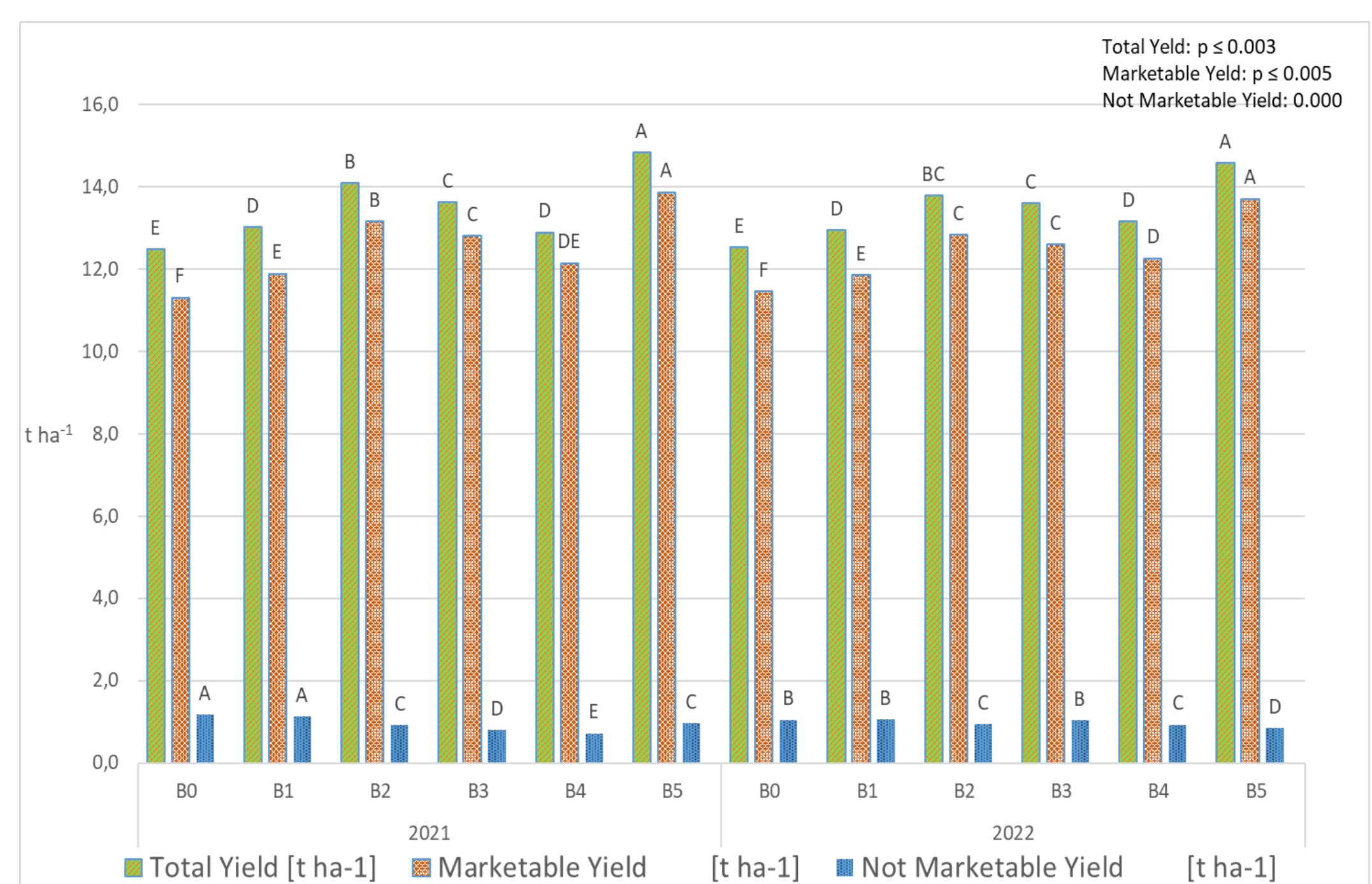
**Table 1.** Doses of biostimulants applied for each foliar treatment.

Biostimulant	Dose frequency [l hl <sup>-1</sup> ]
B1	0.110
B2	0.125
B3	0.125
B4	0.030
B5	0.025



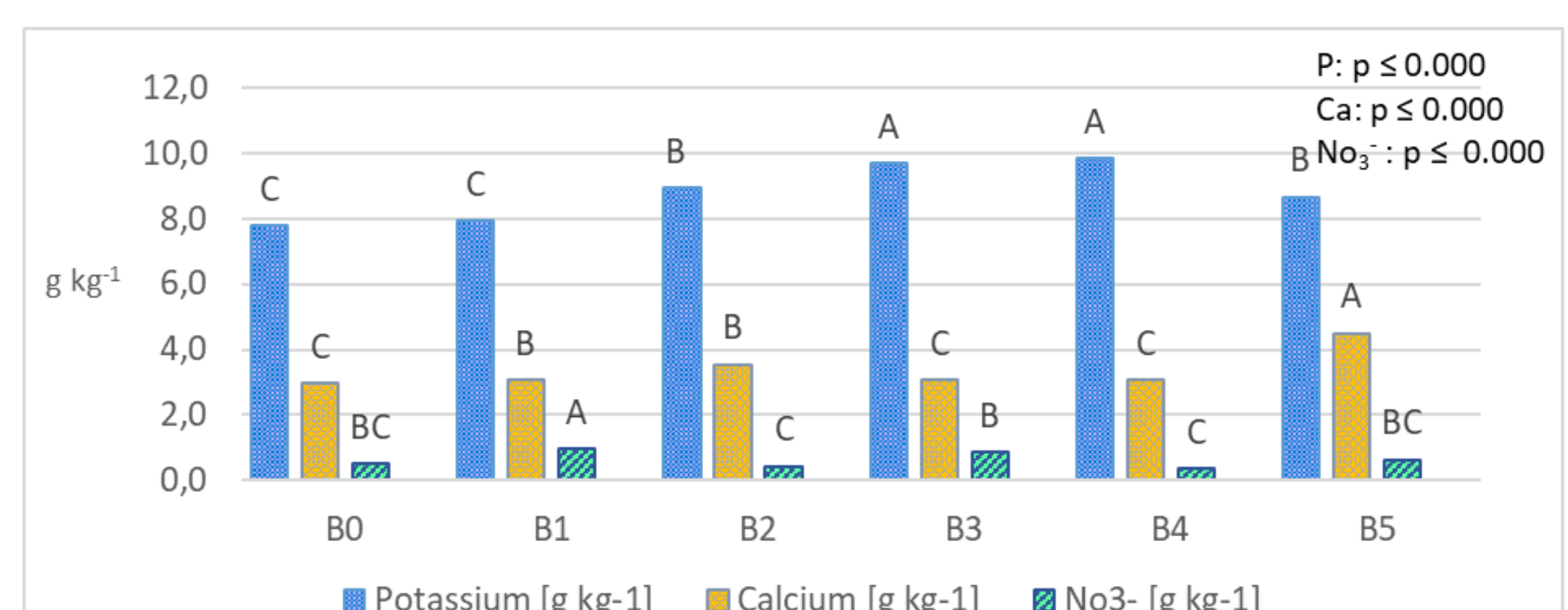
### RESULTS & DISCUSSION

**Fig. 1.** Effect of the interaction of the year and biostimulants on yield of "Pizzutello" tomato landrace.



Means followed by the same letter are not significantly different for  $p \leq 0.05$  according to Tukey's test.

**Fig. 2.** Effect of the interaction of the year and biostimulants on the quality of "Pizzutello" tomato landrace



Quality data is shown as an average of the two years of testing. Means followed by the same letter are not significantly different for  $p \leq 0.05$  according to Tukey's test.

### CONCLUSION

Our results indicate that the application of biostimulants has proved effective in improving plant growth and productivity of tomato under limited water availability conditions. Furthermore, although the sub-optimal growing conditions of the test environment, fruit qualitative features were improved.