**Biostimulatory effects upgrade soil fertility and plant resilience to field-drought stress: attribute-evidence from date palm (*Phoenix dactylifera* L.), var. Boufeggous**

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The phenomena of climate change and global warming are already exerting negative effects on plants, which are projected to worsen by the end of the 21st century. Furthermore, the challenge of nourishing some 10 billion people by 2050 versus intense drought versus extensive agriculture is further complicating an already complex problem. For the aforementioned, the sustainable reliance on biostimulatory microorganisms and/or products may upgrade both plant productivity and soil fertility, contributing to practical elements of the solution. Thus, Arbuscular Mycorrhizal Fungi (AMF), Plant Growth-Promoting Rhizobacteria (PGPR), and organic amendment (e.g., compost) are gaining wide attention for their multi-beneficial effects. In this regard, the present study aimed at assessing AMF (AMF), and/or PGPR (B), and/or compost (C) addition on date palm vitroplants, var. Boufeggous, traits as well as soil physicochemical properties under field, with well-watered (WW) and drought stress (DS) imposed regimes. The obtained results revealed the tripartite combination (AMF+B+C) considerably attenuated DS in date palm, an attenuation manifested through enhanced biomass (76%), shoot phosphorus (P) (293%), and upgraded plant-water relations. Moreover, the decreased levels of hydrogen peroxide (H2O2) and malondialdehyde (MDA) were connected to ameliorated total soluble sugar (TSS, 208%) and protein (TSP, 84%) contents under DS, compared to the control. On the other hand, the applied biostimulants and their different combinations showcased an improvement in soil physicochemical properties, notably total organic carbon (TOC), total organic matter (TOM), available phosphorus (P), and glomalin content compared to the control, despite water deficiency. All in all, the recorded results are highly encouraging and underscore the significance of combining the studied biostimulants to deal with deleterious drought stress. Thus, plants' resilience to drought can be boosted under (semi-)arid climates relying on biostimulants, as evidenced in date palm.

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