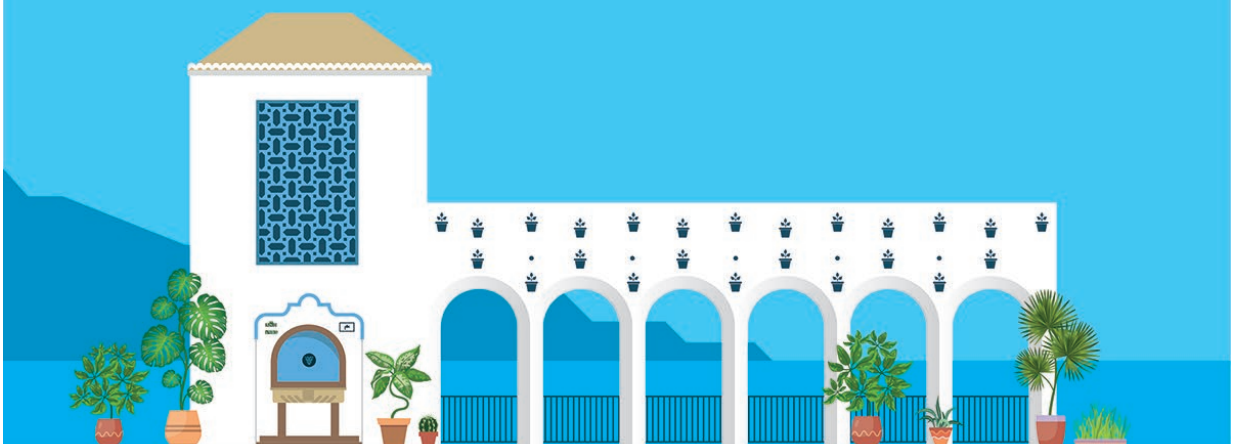


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S1.6 Effect of bacterial inoculation on the physiological response of strawberry under phosphorus deficit conditions

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Intensive strawberry cultivation generates a large environmental impact due to the application of excessive chemical inputs that contaminate aquifers and soils. One of the major problems in agriculture is the scarce availability of some essential nutrients in arable soils, such as phosphorus, which is largely inorganic and insoluble form for plants. For this reason, it is important to find out more environmentally sustainable alternatives that will cover the main functions of chemical fertilizers and, at the same time, improve crop yields.

The main objective of the present work was to evaluate the effect of a consortium of plant growth-promoting rhizobacteria (PGPR) with the ability to solubilize phosphates on the growth and physiological response of strawberry plants grown under phosphorus deficit conditions (both in the absence of phosphorus and in the presence of insoluble phosphorus). Four differential treatments were chosen depending on whether or not the plants had bacterial inoculum and whether or not the fertilizer used contained inorganic phosphorus.

The results obtained showed a positive effect of PGPR inoculation and this effect was especially noticeable in plants grown with an insoluble phosphorus supply. This response was mediated by direct and indirect effects of the bacterial strains used on the plants, especially the phosphate solubilization capacity, which made possible the bioavailability of the phosphorus provided.

In conclusion, this study shows the potential of inoculation with PGPR to improve strawberry tolerance to phosphorus deficit, making feasible a line of work aimed at making possible more sustainable cultivation practices.