

Integrative soil application of N and foliar *Spirulina platensis* improves morpho-physiological responses and tuberose yield oil in sandy soil

The cyanobacteria may contribute significantly to sustainable agriculture by enhancing plant growth, productivity and environmental quality. Tuberose is ranked among the ten most significant cut flowers in the world. In this regard, this study intends to improve the tuberose plant's growth, flowering, corms, and concrete oil under sandy soil conditions by employing a sufficient amount of N fertilizer or/and *Spirulina platensis* extract. N was added to the pot at a rate of 2, 4 g and the control treatment (without adding; 0). *S. platensis* extract was foliar sprayed at concentrations of 10, 15 %, and distilled water. Results showed that N or *S. platensis* increased the leaves dry weight, no. of florets/spike, spike dry weight, corms and cormels dry weight, total chlorophyll, and concrete oil. Ultimately, a combination of 2 g N/plant with a 15% concentration of *S. platensis* extract proved to be the most successful treatment for all the features under investigation.