

The biostimulant LALSTIM® OSMO increased the yield of greenhouse lettuce during summertime heat stress.



CONTEXT

Greenhouse lettuce is exposed to variable stress factors during summertime cultivation. These include high temperatures and uneven growth substrate moisture. On lettuce, abiotic stress can appear as slow growth, smaller yields and physiological disorders.

LALSTIM OSMO contains glycine betaine, an osmolyte naturally enhancing stress tolerance in plants. Glycine betaine is absorbed quickly by the plants, where it maintains the water balance and the normal activity of plant cells during environmental stresses. It also improves the circulatory flow of nutrients in the plant. LALSTIM OSMO is suitable for organic production.

OBJECTIVE

To study the effect of LALSTIM OSMO on yield in commercially grown greenhouse lettuce during summertime heat stress.

MATERIALS AND METHODS



LOCATION AND DATE

Commercial greenhouse, Finland

July–August/2021



CULTIVARS

‘Multired 134’, ‘Jagger’, ‘Bassari’ and ‘Viivi’



CULTIVATION

Peat-based growing bag (Kekkilä Airboost Bio) with drip irrigation.

The mean day temperature was +40 °C and the mean night temperature was +30 °C for two weeks during seedling stage.

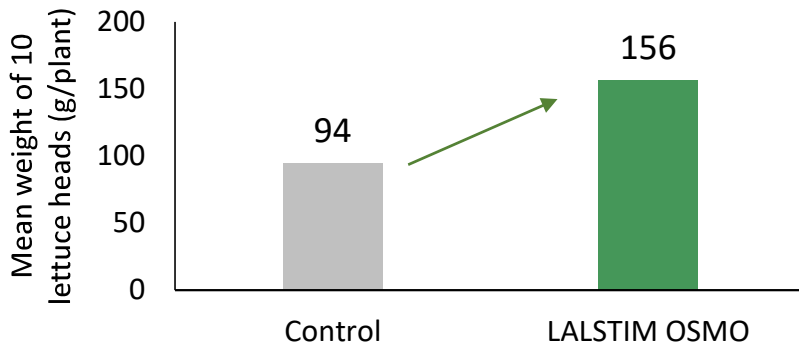


TREATMENTS

1) Untreated control

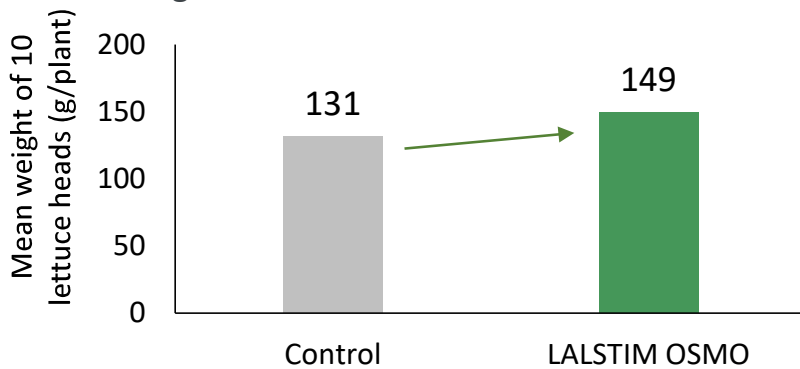
2) LALSTIM OSMO spraying (6 g/1 liter water) at 2-leaf stage and reapplication after 2 weeks. The plants were sprayed evenly moist.

- LALSTIM OSMO increased the yield of 'Multired 134' during heat stress.



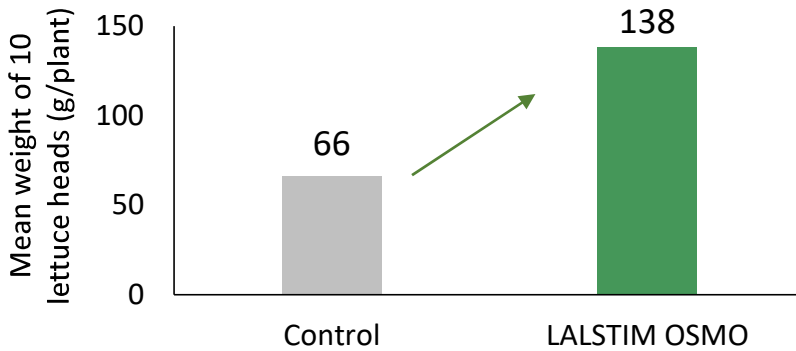
Control LALSTIM OSMO

- LALSTIM OSMO increased the yield of 'Jagger' during heat stress.



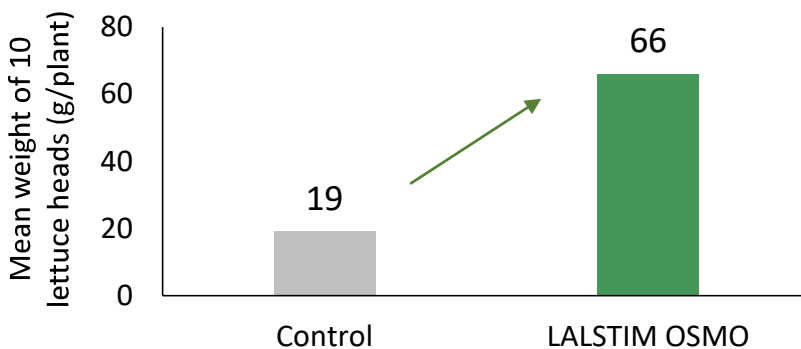
Control LALSTIM OSMO

- LALSTIM OSMO increased the yield of 'Bassari' during heat stress.



Control LALSTIM OSMO

- LALSTIM OSMO increased the yield of 'Viivi' during heat stress.



Control LALSTIM OSMO