The biostimulant LALSTIM® OSMO increased the yield and reduced the tipburn incidence of greenhouse lettuce during the stress conditions of wintertime cultivation.

CONTEXT

Greenhouse lettuce is exposed to variable stress factors during wintertime cultivation. These include low and fluctuating temperatures as well as unfavorable light conditions. On lettuce, abiotic stress can appear as slow growth, smaller yields and tipburn caused by calcium deficiency during stages of rapid growth.

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 and tipburn incidence in commercially grown greenhouse lettuce.

MATERIALS AND METHODS

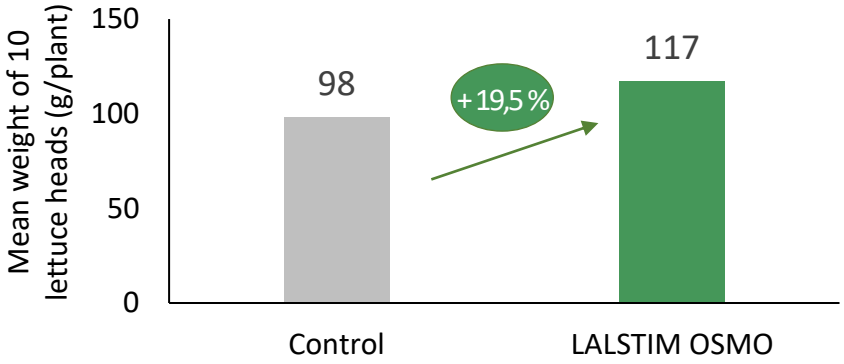
LOCATION AND DATE
Commercial greenhouse, Finland
January–March/2021

CULTIVARS
'Jagger', 'Bassari' and 'Matthew'

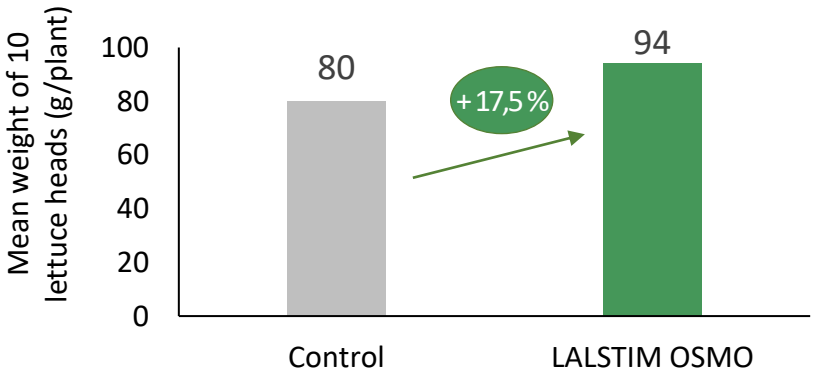
CULTIVATION AND SUBSTRATE
Peat-based growing bag (Kekkilä Airboost Bio) with drip irrigation
Target temperatures: night 18°C, day 20°C and ventilation 22°C
The actual temperatures in the greenhouse were occasionally a few degrees lower than the target temperatures.

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

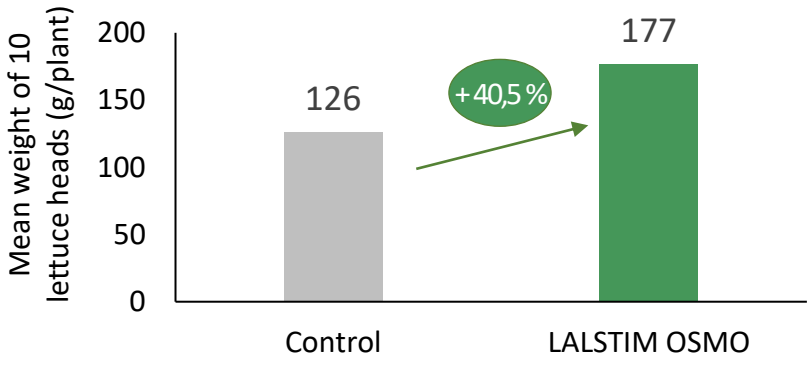
- LALSTIM OSMO increased the yield of 'Jagger' by **19,5 %**



- LALSTIM OSMO increased the yield of 'Bassari' by **17,5 %**



- LALSTIM OSMO increased the yield of 'Matthew' by **40,5 %**



- LALSTIM OSMO decreased the tipburn incidence on 'Matthew'. The observations were made 6 weeks after sowing from 70 plants/treatment.