

Potassium nitrate sprays positively affected vegetative characteristics of sunflower and safflower grown under salinity.

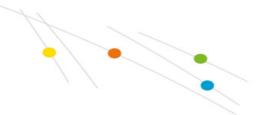
The effect of 250 ppm foliar application of  $\mathsf{KNO}_3$  was assessed on growth and activity of nitrate reductase in the leaves of sunflower and safflower, subjected to different levels of salinity. In sunflower, leaf area and fresh and dry weight of leaves were increased by 32%, 36,4% and 43,4% respectively in comparison with the non-sprayed control (Table 1). The  $\mathsf{KNO}_3$  foliar spray also increased the nitrate content, NR activity and soluble proteins (Table 2). Potassium nitrate sprays also increased the K concentration and decreased the CI concentration in the leaves in both crops for all three salinity levels. In sunflower and safflower the benefits of  $\mathsf{KNO}_3$  foliar spray are demonstrated, irrespective to the plant growth under non saline or saline conditions.

Table 1. Effect of foliar application of KNO $_3$  on vegetative characteristics of sunflower under different salinity levels. LAI = Leaf Area Index, LFW = Leaf Fresh Weight and LDW = Leaf Dry Weight.

| Sunflower               |                         | LAI<br>cm² | LFW<br>g | LDW<br>g |
|-------------------------|-------------------------|------------|----------|----------|
| Non saline              | Control                 | 2894       | 65,8     | 13,9     |
|                         | Foliar KNO <sub>3</sub> | 3857       | 97,5     | 22,6     |
| 0,3 % sea-salt dilution | Control                 | 2424       | 52,5     | 10,5     |
|                         | Foliar KNO <sub>3</sub> | 3465       | 80,4     | 17,8     |
| 0,6 % sea-salt dilution | Control                 | 1806       | 34,2     | 6,7      |
|                         | Foliar KNO <sub>3</sub> | 2652       | 53,8     | 11,9     |

Table 2. Effect of foliar application of KNO $_3$  on amount of nitrate, nitrate reductase activity and soluble proteins of sunflower under different salinity levels.





| Sunflower               |                         | Nitrate content<br>leaves | Nitrate<br>reductase<br>activity      | Soluble proteins |
|-------------------------|-------------------------|---------------------------|---------------------------------------|------------------|
|                         |                         | μmol (g fw) <sup>-1</sup> | µmol NO₃<br>(g. fw. hr) <sup>.1</sup> | mg/g fw          |
| Non saline              | Control                 | 25,6                      | 9,4                                   | 25,8             |
|                         | Foliar KNO <sub>3</sub> | 29,4                      | 11,0                                  | 29,2             |
| 0,3 % sea-salt dilution | Control                 | 23,5                      | 8,7                                   | 24,0             |
|                         | Foliar KNO <sub>3</sub> | 27,5                      | 10,3                                  | 27,9             |
| 0,6 % sea-salt dilution | Control                 | 18,7                      | 7,1                                   | 19,0             |
|                         | Foliar KNO <sub>3</sub> | 22,5                      | 8,5                                   | 23,3             |