



Comparative study of alkaline and saline stresses on two oil producing plants

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Abstract:

Salinization and alkalization of soil is a widespread environmental problem. The adaptive responses of two oil producing plants, jojoba and sunflower, to salt and alkaline stresses were studied. The increase in NaCl or Na₂CO₃ level in the culture media was associated with a fall in growth and pigment biosynthesis in the test plants. In addition, the two test plants accumulated Na⁺ along with a decrease in water content. Moreover, there was strong positive correlation between biomass production of jojoba and sunflower shoots and roots and K⁺/Na⁺ selectively under NaCl or Na₂CO₃ stress. The uptake of Na⁺ and K⁺ by the roots of the test plants was increased while the ion translocation from roots to shoots was generally decreased with increasing NaCl or Na₂CO₃ concentration in the culture media. The data herein obtained indicate that jojoba plants can be assumed to have more affinity to tolerate NaCl or Na₂CO₃ Stress than sunflower plant.

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