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## Effects of iodine on visual color quality of sweet pepper under salinity stress

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### Abstract

The quality of the pepper's color was assessed by examining the intensity and consistency of its outer pigmentation, which reflects the ripeness and overall marketability of the fruit. This study investigated how three different doses of iodine (0, 50, and 100  $\mu\text{M}$ ) affected the visual color quality of peppers under varying levels of salinity stress (2, 4, 6, and 8  $\text{dS m}^{-1}$ ). The  $L^*$  value ranged from 40.6 to 52.2, the  $a^*$  value varied between -17.1 and 23.8, the  $b^*$  value fluctuated between 18.5 and 32.5, and the chroma value shifted between 44.6 and 57.3. The application of foliar iodine had a significant impact on the  $L^*$ ,  $a^*$ ,  $b^*$ , and chroma values of pepper fruits. However, the  $L^*$ ,  $a^*$ , and  $b^*$  values decreased with higher salt stress, with the highest values observed at a salinity level of 2  $\text{dS m}^{-1}$ . The chroma value of pepper fruit decreased with foliar iodine application and further reduced with increasing salinity stress. The best visual color quality was achieved with a foliar application of 100  $\mu\text{M}$  iodine and a salinity stress level of 2  $\text{dS m}^{-1}$ . Under salinity conditions of 6 and 8  $\text{dS m}^{-1}$ , foliar iodine did not significantly improve the visual color quality of pepper fruits. Therefore, foliar iodine is recommended for use under low soil salinity conditions. In future studies, iodine could be combined with different regulators to enhance the quality of pepper fruits under high salinity stress.

**Key Words:** Fruit quality, *Capsicum annum*, Color parameters, Iodine, Salinity.

