

Lettuce grown in indoor farms under fully artificial light is susceptible to a physiological disorder known as tip-burn. Tip-burn is a major problem for most vegetable cultivation under a controlled environment, especially the completely closed environment of an indoor farm equipped with artificial light. The primary cause of tip-burn stress, which occurs on plants cultivated in completely closed environments, such as indoor farms, is calcium deficiency. The deficiency is not because of a lack of calcium in the supply nutrients but rather is caused by the inability of calcium to enter the rapidly developing younger leaves.