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FRUIT QUALITY RESPONSE OF STRAWBERRY CV 'ANTILLA' AFTER APPLICATION OF CALCIUM

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Abstract

As an important economically and nutritionally valuable fruit, strawberry has been planted everywhere worldwide, which, due to the shortage of arable land, has created an obstacle to successional farming. The study investigates the effect of calcium application in strawberry fruit quality, including fruit firmness and ºBrix. Strawberries (Fragaria × ananassa Duch. 'Antilla') grown in a soilless system in a greenhouse were exposed to different calcium (Ca) concentrations and application interval during the production cycle of strawberry plants added as $Ca(NO_3)_2$. The control only has the Ca contained in the irrigation water. The S treatment added Ca to the substrate, FS and FQ treatments added Ca by foliar spray weekly or biweekly, respectively. Fruit fresh weight, firmness, pH, titratable acidity and ºBrix value were studied. Compared to other treatments, softer fruits were obtained in the control group. The reduction of fruit firmness in the control treatment coincides with a lower average pH, which can cause fruit softening and damage during storage. In addition, pH plays an important role in strawberry flavour. Foliar application of Ca showed strawberries with higher firmness, irrespective of the application interval weekly or biweekly. From an environmental standpoint, optimizing calcium application in soilless systems contributes to resource-efficient agriculture by reducing nutrient waste, minimizing leaching, and lowering the environmental footprint associated with excessive fertilizer use. This approach supports sustainable fruit production, especially in areas facing soil degradation and water scarcity, thereby aligning strawberry cultivation practices with broader environmental conservation goals.

Key words: firmness, foliar application, Fragaria x ananassa Duch, irrigation water, pH, yield

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