

## Effects of thidiazuron application on size, quality and storage life of physalis (*Physalis peruviana L.*) fruit in hydroponic system

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(Received: 7 Aug. 2017 ; Accepted : 1 Apr. 2017)

### Abstract

Physalis is a tropical fruit, native to South America. Due to its pleasant taste and medicinal properties, it has recently found many fans in Iran, and has been considered as a valuable and expensive fruit. This research, arranged as completely randomized design with three replications, was conducted to investigate the effects of different concentrations of Thidiazuron (0, 20 and 40 mg/L) on size and some qualitative characteristics of physalis fruits. The obtained results showed that fruit size and fresh weight were significantly increased ( $P \leq 0.01$ ) at 20 and 40 mg/L treatments as compared to the control. The electrical conductivity, total soluble solids (TSS) and lycopene content of fruits decreased with increasing concentration of Thidiazuron ( $P \leq 0.01$ ). Also, increasing Thidiazuron concentrations from 20 to 40 mg/L led to significantly increasing ( $P \leq 0.01$ ) fruit maturity time (7 and 11 days, respectively). On the other hand, it was observed that storage life of the fruits was significantly increased ( $P \leq 0.01$ ) by increasing the Thidiazuron concentration. The untreated fruits showed the least shelf life (11 days) at room temperature, while fruits treated with 20 and 40 mg/L Thidiazuron had higher shelf life (22 and 28 days, respectively). Although application of Thidiazuron reduced somehow some qualitative features of the fruits at harvest time, but increased considerably the quantitative traits (fruit size and weight) and fruit shelf life.

**Keywords:** Golden berry (Physalis), Fruit size, Lycopene, TSS, Shelf life.

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