

Postharvest respiration pattern of piquín chili pepper (*Capsicum annuum* L. var. *glabriusculum*) and the effect of sanitation, edible coatings, and vacuum packaging as conservation strategies

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The fruits of the *Capsicum* genus have remarkable importance in the food industry because of the properties that their carotenoids and capsaicinoids provide to color and pungency. Piquín chili pepper (CP) (*Capsicum annuum* L. var. *glabriusculum*) is a semi-domesticated perennial plant that produces small rounded fruits, which are highly appreciated in the northeastern part of Mexico. Post-harvest evaluations of *Capsicum* fruits have been focused on other types of peppers. The objective of this research was to identify the respiratory and transpiration patterns of the piquín pepper. The effects of sanitation treatments, edible coatings, and vacuum packaging were evaluated as post-harvest strategies on piquín pepper. Respiration and transpiration patterns were determined coupling a respiration chamber with 15 g of CP to the infrared gas analyzer. Sanitation treatments included evaluating peracetic acid and Suntext. The effects of edible coating on CP fruits were analyzed by applying four different coating solutions: acid soluble chitosan (ASC), soy protein (SP), sodium alginate (SA) (2% w/v), and Semperfresh © (SMP) (1% w/v). For the vacuum packaging probes, polyamide-polyolefin presealed food bags were used for 99 and 2 second vacuum pressure (+99% and 0% vacuum percentage, respectively). Room and refrigerated conditions were evaluated for both analyses. The results seem to suggest that CP is a non-climacteric fruit, with a constant decrease of its respiration rate. A viable sanitation technique was developed. Finally, all the coatings and vacuum packaging have yielded mixed results as to their effectiveness in improving postharvest characteristics of piquín pepper.

Biography

Fernando G. Viacava-Romo is a Biochemical Food Engineer from the Instituto Tecnológico de Morelia. During his formation, Viacava-Romo had professional residences at different research centers, like Centro de Investigaciones en Ecosistemas (CIEco, UNAM) and Centro Multidisciplinario de Estudios en Biotecnología (CMEB, UMSNH). Currently, he is pursuing his Master of Science in Biotechnology as a part of Environmental and Agricultural Biotechnology Research grant, Tecnológico de Monterrey. He is expected to obtain his master's degree at the end of this year.

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