

**Title** Improvement the color of habanero chile pepper (*Capsicum chinense*, Jacq.) by means of the application of Ethrel®

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### Abstract

Chile peppers are popular spices in many parts of the world, valued for their sensory attributes of color, pungency and flavour. In Mexico, peppers represent a culinary tradition and a cultural symbol. *Capsicum chinense* (Habanero chile pepper) is one of the five species of the genus *Capsicum* harvested in Mexico. The Habanero chile pepper is very aromatic and is the hottest chile pepper in the world. In Mexico, almost all Habanero chile pepper is harvested in Yucatan peninsula. Most of this chile demanded in Mexico and in international markets it is mature with their characteristic orange or red color; although in Yucatan it is some different, since a percentage it is used mainly of green color. At the present time exist a significantly increment in the demand of habanero chile pepper at national and international markets; the color is a very important quality factor in these markets. In Yucatan, during postharvest ripening a percentage of chilis doesn't change their green color to orange or red characteristic color, which it represent an economic problem. The objective of this study was evaluated the effect of the treatment of green habanero chile peppers with Ethrel® (chlorophosphonic-2-acid), on their color change to the orange characteristic color. Green habanero chile peppers at two grades of maturity, they were treated with 3000 ppm of Ethrel at 30°C during 10 minutes, then treated chiles were ripened. The effect of Ethrel® in color, firmness and total carotenoid and capsaicinoids compounds were evaluated. A significantly increase of change of color from green to orange was achieved in chilies treated at both grades of maturity, from 25, (without treatment) to 85 % (with Ethrel treatment). The color, total carotenoids and capsaicinoids concentration of chiles treated with Ethrel® were similar those chilies harvested with orange color. Although the firmness of treated chiles was lightly minor, their conserve suitable general characteristics of quality. One concludes that the treatment with Ethrel® is a good alternative in order to improve the color of habanero chile pepper.