

Title Effect of maturity and storage temperature on the development of peteca in lemons (*Citrus limon* (L.) Burm. F.) cv. Eureka

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Abstract

To evaluate the effect of maturity and storage temperature on the development of the physiological disorder peteca, lemons cv. Eureka were harvested from a grove with northern exposure located in Mallerauco (33°45' Latitude South) Metropolitan Region of Chile, at 2 levels of maturity (silver or yellow). After storage for 60 d at 3 or 7 °C, under 90% R.H., fruits were evaluated visually for incidence of epidermal and subepidermal peteca. At that time, the concentration of galacturonic acid and degree of methylation were measured in the albedo, and calcium, hydrogen peroxides and total oxalate concentrations, peroxidase and polyphenoloxidase (PPO) activities were determined in the juice and albedo. Yellow lemons at 3 °C developed more epidermal peteca than fruit stored at 7 °C, and that silver fruit stored at 3 and 7 °C, with these last lemons presenting a higher pectin quality than fruit stored at 3 °C. Maturity and temperature interacted significantly on the concentrations of peroxide and calcium in the albedo, which in average were much higher than in the juice, while for PPO and peroxidases, this interaction was highly significant both in juice and albedo, with higher activity in the albedo. These biochemical evaluations suggest that peteca is a result of some kind of stress on the fruit. It is concluded that yellow lemons are more prone to develop peteca than silver fruit. They will develop greater incidence of the disorder when stored at temperatures as low as 3 °C for 60 d, and that this condition affects the degree of methylation in the albedo, which would end up altering the quality of pectins.