

Abstract:

Golden Delicious apples were subjected to mild heat pre-treatments. Eleven pre-treatments conditions were tested using a 22 central composite design. The independent variables studied were time and temperature. Afterwards apples were peeled, cored, cut into quarters sliced and packed in unsealed bags and held for up to 12 days at 5°C. Samples were analyzed immediately after pre-treatments (day 0) and each two days during storage period for the following quality parameters: soluble solid content (SSC), pH, colour and firmness. The data were analyzed using surface response methodology (RSM). Mild heat pre-treatments in the range of temperature of 34-42°C during less than 70 minutes, avoided the cut surface browning and showed a firming effect on the Golden Delicious apple quarters. These favorable responses were observed immediately after heat treatments and preserved along storage time (12 days). The use of this pre-treatment seems to be a promising methodology for extending shelf life of fresh-cut apples, reducing the dependence on chemical additives.