

Abstract:

Strawberry is a rapidly decaying fruit and much of the postharvest research on strawberry is devoted to the development of methods to improve its postharvest shelf life. Physical treatments involving a low UV-C dose (4.6 kJ·m⁻²) and heat treatment (45 °C, 3 h in air oven) have been assayed both separately and in a combined fashion on strawberries (*Fragaria x ananassa* 'Seascape') 70-80% surface red. After treatments, fruit were kept at 20 °C for 2 d and fruit quality characteristics such as surface color and lightness, anthocyanin content, total phenol and sugar content were measured. Also, the development of surface fungal infections was monitored to quantify the effect of treatments. For both the heat and combined treatments, development of surface hue was delayed, a result in accordance to the observed reduced rate in anthocyanin increment; for these same treatments, lightness loss was also delayed. Fruit treated with the combined physical treatment showed a steady phenol content along the running time compared with the decrease found in those on which the treatments were assayed separately. No significant differences among treatments were observed in the total sugar content except for day 2. Over the experimental time (7 d after harvest), combined physical treatment drastically reduced surface fungal infections. Based on these results, a potential synergistic effect from the combination of both treatments can be foreseen for most parameters studied, thus suggesting an innovative physical method to improve postharvest life (i.e. prolong shelf life and maintain quality parameters), which might prove to be cheap, simple and market-appealing as well.