

Title Optimization of postharvest ultrasonic treatment of strawberry fruit
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Abstract

Freshly harvested strawberry fruit were treated at ultrasonic powers from 250 to 450 W at a constant frequency of 40 kHz for different times (5–15 min). Response surface methodology (RSM) based on a two factors three level central composite design was applied to optimize ultrasonic treatments on decay incidence, microbial population and quality maintenance of strawberries. According to response surface analysis, the optimal treatment parameters were an ultrasonic power of 250 W and treatment time of 9.8 min. Decay incidence and quality parameters of strawberries treated at the determined optimum conditions were compared with a water treatment during storage for 8 d at 5 °C. An ultrasonic treatment was found to be effective in inhibiting decay incidence and preserving quality in strawberries, and these results suggest that such a treatment may provide an alternative for extending shelf-life and maintaining quality of strawberry fruit.