Aplikasi Gabungan Metode Ozonasi - Nanomist dan Sinar UV untuk Meningkatkan Masa Simpan Serta Mempertahankan Kualitas Pepaya Potong Segar = Combined Application of Ozonation - Nanomist and UV Light Methods to Increase the Shelf Life and Maintain the Quality of Fresh Cut Papaya

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Abstrak

Pepaya potong segar, memiliki batas waktu penyimpanan yang terbatas karena rentan terhadap kebusukan dan kontaminasi bakteri. Dalam penelitian ini, buah pepaya potong segar mendapatkan perlakuan dengan metode gabungan ozon-nanomist dan sinar UV dengan variasi dosis ozon-nanomist dan jenis material pengemasan. Sampel pepaya potong segar seberat 100 gram dikontakkan dengan ozon-nanomist dan sinar UV selama 3 menit, kemudian disimpan selama 6 hari pada suhu ruang 25°C setelah perlakuan. Pengujian dilakukan dengan mengombinasikan dosis ozon-nanomist (0,1; 0,2 dan 0,3 ppm) dengan penggunaan kemasan berbahan PP, PET, dan LDPE. Masa simpan dievaluasi melalui uji Total Bakteri, sementara kualitas sampel diukur berdasarkan kandungan vitamin C, perubahan massa, dan sifat organoleptik. Hasil penelitian secara umum menunjukkan bahwa kemasan PET dan dosis ozon 0,3 ppm ditambah dengan sinar UV selama 3 menit merupakan kombinasi yang terbaik untuk mempertahankan kualitas dan memperpanjang umur simpan dari pepaya potong segar. Hasil penelitian menunjukkan bahwa variasi dosis ozon – nanomist dan pengemasan dapat meningkatkan kualitas dan memperpanjang umur simpan pepaya potong segar selama 6 hari percobaan yang dilakukan.

.....Fresh-cut papaya has a limited storage time because it is susceptible to spoilage and bacterial contamination. In this study, fresh-cut papaya fruit was treated with a combined method of ozone-nanomist and UV light with variations in ozone-nanomist dosage and type of packaging material. Fresh-cut papaya samples weighing 100 grams were contacted with ozone-nanomist and UV light for 3 minutes, then stored for 6 days at 25°C room temperature after treatment. Tests were conducted by combining ozone-nanomist doses (0.1; 0.2 and 0.3 ppm) with the use of PP, PET, and LDPE packaging. Shelf life was evaluated through Total Bacteria test, while sample quality was measured based on vitamin C content, mass change, and organoleptic properties. The results generally showed that PET packaging and ozone dose of 0.3 ppm coupled with UV light for 3 minutes was the best combination to maintain the quality and extend the shelf life of fresh-cut papaya. The results showed that the variation of ozone - nanomist dosage and packaging could improve the quality and extend the shelf life of fresh-cut papaya during the 6-day experiment conducted.