Pengaruh Teknologi Ozon-Nanomist dan Material Pengemasan untuk Meningkatkan Masa Simpan dan Mempertahankan Kualitas Bawang Putih Kupas = Effect of Ozone-Nanomist Technology and Packaging Materials to Increase Shelf Life and Maintain the Quality of Peeled Garlic

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Abstrak

Bawang putih kupas banyak dipilih karena lebih praktis dan mempercepat pengolahan. Namun, bawang putih kupas memiliki waktu simpan yang singkat karena mudah rusak dan busuk akibat proses pengupasan. Sehingga diperlukan metode pengawetan untuk memperpanjang masa simpan bawang putih kupas. Ozon – Nanomist merupakan kabut air yang mengandung ozone-nanobubble berfungsi sebagai disinfektan yang mampu memperlambat penurunan kualitas akibat pembusukan dengan mensterilisasi langsung permukaan objek. Pada penelitian ini bawang putih kupas diawetkan dengan ozon-nanomist dan disimpan pada material pengemasan. Sampel bawang putih kupas 30 gram dikontakkan dengan ozon-nanomist. Kemudian sampel yang telah diberi perlakuan ozonasi disimpan selama 30 hari pada suhu ruang 25°C. Berbagai dosis ozon-nanomist (0,1 ppm, 0,3 ppm, dan 0,4 ppm) diuji dengan mengombinasikan penggunaan kemasan berbahan PP, PET, dan LDPE. Umur simpan dinilai melalui uji Total Bakteri Mesofilik Aerobik (TBMA). Sedangkan kualitas sampel dinilai melalui kandungan kalsium, perubahan massa dan sifat organoleptik. Hasil penelitian menunjukkan kombinasi dosis ozon – nanomist 0,4 ppm dan material kemasan PET memberikan hasil terbaik dalam menurunkan tingkat mikroba hingga 99,7% dan menjaga tingkat kandungan kalsium hingga 6,83 mg/100mL. Dosis ozon-nanomist 0,4 ppm dengan kemasan PET memiliki kehilangan massa paling rendah dibandingkan kontrol, serta menghasilkan nilai organoleptik yang lebih baik dibandingkan sampel kontrol. Hasil penelitian mengungkapkan bahwa dosis ozon-nanomist dan pengemasan dapat meningkatkan kualitas dan memperpanjang umur simpan bawang putih kupas hingga 30 hari pada suhu ruang.
.....Peeled garlic is widely chosen because it is more practical and speeds up processing. However, peeled garlic has a short shelf life because it is easily damaged and spoiled by the peeling process. Therefore, a preservation method is needed to extend the shelf life of peeled garlic. Ozone – Nanomist is a water mist containing ozone-nanobubble which functions as a disinfectant and is able to slow down the quality degradation due to decay by directly sterilizing the surface of the object. In this study, peeled garlic was preserved with ozone-nanomist with varying doses of ozone-nanomist and packaging materials. A 30 gram peeled garlic sample was contacted with ozone-nanomist. Then the samples that had been treated with ozonation were stored for 30 days at room temperature 25°C. Various doses of ozone-nanomist (0.1 ppm, 0.3 ppm and 0.4 ppm) were tested by combining the use of packaging made from PP, PET and LDPE. Shelf life was assessed through the Total Mesophilic Aerobic Bacteria (TBMA) test. While the quality of the sample is assessed through the content of calcium, changes in mass and organoleptic properties. The results showed that the combination of 0.4 ppm ozone-nanomist dose and PET packaging material gave the best results in reducing microbial levels by up to 99.7% and maintaining calcium levels up to 6.83 mg/100mL. The dose of ozone-nanomist 0.4 ppm with PET packaging has the lowest mass loss compared to the control, and produces better organoleptic values than the control sample. The results of the study revealed that the

dose of ozone-nanomist and packaging can extend the shelf life of peeled garlic up to 30 days at room temperature 25°C.