

ABSTRAK

PENGARUH UMUR PANEN DAN APLIKASI NANO-KALSIUM PASCAPANEN TERHADAP KARAKTERISTIK FISIKOKIMIA DAN TRANSLUSENSI BUAH NANAS (*Ananas comosus* L.) KLON MD2

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Nanas (*Ananas comosus* L.) merupakan buah tropis yang populer dan memiliki nilai ekonomis yang tinggi. Kualitas buah nanas sangat dipengaruhi oleh berbagai faktor, salah satunya adalah umur panen. Nano-kalsium diharapkan dapat memperkuat dinding sel buah, sehingga meningkatkan umur simpan dan mengurangi kerusakan akibat proses fisiologis pascapanen. Translusensi pada buah nanas merupakan indikator kualitas yang penting, karena berkaitan dengan tingkat kematangan dan daya tarik konsumen. Tujuan penelitian ini adalah untuk mengetahui pengaruh umur panen dan perendaman buah dalam nano-kalsium terhadap karakteristik fisikokimia dan terjadinya translusensi selama penyimpanan nanas klon MD2. Penelitian dilakukan di PT. GGP dari bulan April sampai dengan Agustus 2023. Penelitian ini menggunakan rancangan acak lengkap dengan 2 faktor yaitu umur buah setelah berbunga (137 HST, dan 146 HST) dan pemberian nanokalsium (kontrol tanpa nanokalsium, nanokalsium 20 mL/L, nanokalsium 40 mL/L, nanokalsium 60 mL/L) dengan 4 kali ulangan. Perlakuan umur panen 137 DAF (day after forcing) pada penyimpanan suhu ruang secara signifikan mengakibatkan rendahnya perubahan warna kulit buah, rendahnya intensitas warna merah dan hijau, rendahnya suhu kulit buah, total padatan terlarut, Rasio TSS/TA, beta karoten, *electrolyte leakage* dan laju respirasi, tetapi mengakibatkan tingginya asam tertitrasi buah, kandungan vitamin C, kalsium buah dan kadar air. Umur panen 137 DAF tidak mengakibatkan perbedaan susut bobot, warna daging buah, keparahan mold, kekerasan dan keparahan translusensi. Perlakuan nanocal 20 mL/L setelah panen pada penyimpanan suhu ruang secara signifikan mengakibatkan rendahnya susut bobot, akan tetapi mengakibatkan tingginya perubahan warna kulit buah, dan intensitas warna merah. Pemberian nano-kalsium 'nanocal' pascapanen tidak menunjukkan perbedaan terhadap peubah lainnya yang diamati dan juga keparahan translusensi. Interaksi perlakuan 137 DAF dan nanocal 20 mL/L secara signifikan mengakibatkan rendahnya susut bobot tetapi kombinasi perlakuan antara umur panen dan pemberian nano kalsium belum secara efektif mempengaruhi karakteristik fisikokimia buah nanas MD2 selama masa simpan.

Kata Kunci : Masa simpan, nanas MD2, nano kalsium, umur panen

ABSTRACT

THE EFFECT OF HARVEST AGE AND POST-HARVEST NANO-CALCIUM APPLICATION ON THE PHYSICOCHEMICAL PROPERTIES AND TRANSLUCENCE OF MD2 CLONE PINEAPPLE FRUIT

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*Pineapple (*Ananas comosus* L.) is a popular tropical fruit with high economic value. The quality of pineapples is influenced by various factors, one of which is the harvest age. Nano-calcium is expected to strengthen the cell walls of the fruit, thus increasing shelf life and reducing damage due to post-harvest physiological processes. Translucency in pineapple is an important quality indicator as it relates to ripeness and consumer appeal. The aim of this study was to determine the effects of harvest age and soaking in nano-calcium on the physicochemical characteristics and the occurrence of translucency during storage of MD2 clone pineapples. The study was conducted at PT. GGP from April to August 2023. A completely randomized design was used with 2 factors: the age of the fruit after flowering (137 days after forcing [DAF] and 146 DAF) and the application of nano-calcium (control without nano-calcium, 20 mL/L nano-calcium, 40 mL/L nano-calcium, and 60 mL/L nano-calcium) with 4 repetitions. The treatment of harvesting at 137 DAF during room temperature storage significantly resulted in lower changes in skin color, lower intensity of red and green colors, lower skin temperature, total soluble solids, TSS/TA ratio, beta-carotene, electrolyte leakage, and respiration rate, but resulted in higher total acidity, vitamin C content, Ca mineral content, and water content. Harvesting at 137 DAF did not result in differences in weight loss, flesh color, mold severity, firmness, and translucency severity. The treatment with nano-calcium at 20 mL/L after harvest during room temperature storage significantly resulted in lower weight loss but caused a higher change in skin color and increased red color intensity. The application of post-harvest nano-calcium did not show differences in other observed variables or translucency severity. The interaction between the 137 DAF treatment and 20 mL/L nano-calcium significantly resulted in lower weight loss, but the combination of harvest age and nano-calcium application has not yet effectively influenced the physicochemical characteristics of MD2 pineapples during the storage period.*

Keywords: *Harvest age, MD2 pineapple, nano-calcium, shelf life*