Application of Modified Atmosphere Packaging (MAP) to Extend Shelf Life of Bamboo Shoots *(Dendrocalamus asper);*

Effects of Packaging and Storage Temperature

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SUMMARY

Quality of bamboo shoots "petung" (*Dendrocalamus asper*) decreases rapidly after harvest, its shelf life is only 1 day. That is caused by the high respiration and transpiration rate. In this study we applied MAP in combination with low temperature storage to bamboo shoots in order to extend their shelf life. Two kinds of packaging materials (PVC wraps and PP bags) were used and unpacked samples acted as control. Shoots were stored at room temperature (±29°C) or in the refrigerator (±10°C). The analysis of shoots included respiration, transpiration, weight loss, discoloration and fungal contamination. It was observed that the average weight loss of unpacked samples is more than 5% per day, while average weight loss of shoots packed in plastic is less than 1% per day. Discoloration and fungal contamination were more severe of shoots stored in room temperature than refrigerated samples. Low temperature gives extended shelf life till 2 days. Combining plastic with low temperature was most effective to extend shelf life of bamboo shoots. PP bag is more effective than PVC wrap to extend shelf life of shoots; packaging shoots in PP stored in low temperature could extend shelf life until 14 days. While packing shoots inside PVC and stored in low temperature could extend shelf life until 12-13 days.

RINGKASAN

Kualitas rebung petung (*Dendrocalamus asper*) menurun secara cepat setelah dipanen, umur simpannya hanya bertahan sampai 1 hari. Hal ini disebabkan oleh karena proses respirasi dan transpirasi masih berlangsung setelah dipanen. Dalam penelitian ini digunakan MAP yang dikombinasi dengan penyimpanan pada suhu rendah untuk memperpanjang umur simpan rebung. Dua jenis plastik (wrap PVC dan kantung PP) yang digunakan dan sampel yang tidak dikemas sebagai control. Selanjutnya, rebung tersebut disimpan dalam suhu kamar (±29°C) dan almari pendingin (±10°C). Analisa yang dilakukan meliputi respirasi, transpirasi, kehilangan berat, perubahan warna, dan kontaminasi jamur. Dari hasil penelitian, diketahui bahwa rata-rata kehilangan berat dari sampel yang tidak dikemas (kontrol) adalah lebih dari 5% per hari, sedangkan rata-rata kehilangan berat pada rebung yang dikemas dalam plastik adalah kurang dari 1% per hari. Perubahan warna dan kontaminasi jamur terlihat jelas pada rebung yang disimpan dalam suhu kamar. Penggunaan suhu rendah dapat sedikit meningkatkan umur simpan rebung hingga 2 hari. Kombinasi plastik dengan suhu rendah dapat memperpanjang umur simpan rebung. Plastik jenis kantung PP lebih efektif daripada wrap PVC untuk memperpanjang umur simpan rebung; Rebung yang dikemas dalam PP disimpan dalam suhu yang rendah dapat memperpanjang umur simpannya hingga 14 hari. Sementara, rebung yang dikemas dalam PVC wrap dan disimpan dalam suhu yang rendah dapat memperpanjang umur simpannya hingga 12-13 hari.

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