

DEVELOPMENT OF READY-TO-USE ASH GOURD (*Benincasa hispida*) CHUNKS WITH EXTENDED STORAGE LIFE

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This study aimed to develop ready-to-use different ash gourd products with extended shelf life with convenience to consumers. A chemical pretreatment (EDTA, calcium chloride, citric acid, and sodium metabisulphite), *Aloe vera* gel coating, packing in low-density polyethylene (LDPE), and vacuum package with PET/LDPE film were tested for their effectiveness with storage under refrigeration ($4\pm1^{\circ}\text{C}$) and freezing ($-18\pm1^{\circ}\text{C}$), to extend the shelf life of cut ash gourd. A total of 12 treatment combinations were tested in this study. Physicochemical parameters and microbial quality were measured during the storage period of 30 days. The chunks with *Aloe vera* gel-coated, chemically pretreated, LDPE-packed and stored under frozen conditions, emerged as the most significantly ($p<0.05$) effective method for quality preservation. With the selected method, total bacterial count of 2.71×10^3 CFU g⁻¹ and a yeast and mold count of 9.09×10^2 CFU g⁻¹ were recorded at the end of the 30 days of storage. Firmness of chunks significantly decreased from 1.81 ± 0.98 N to 1.01 ± 0.32 N. In color, the L* and a* values increased significantly from 62.97 ± 0.11 to 65.60 ± 0.5 and from -2.13 ± 0.132 to -1.33 ± 0.1 , respectively, while b* value changed from 4.18 ± 0.11 to 4.21 ± 0.68 , which was not significant. The pH of the chunks also increased significantly from 4.35 ± 0.17 to 4.91 ± 0.18 , while TSS significantly decreased from 2.8 ± 0.1 to 2.37 ± 0.15 °Brix during storage. A ready-to-use spice mix was developed to be used during the cooking of the chunks, with a series of experiments. The mixture with roasted curry powder, chili, pepper, onion, garlic, curry leaves, garcinia, salt and turmeric powders was selected with the highest acceptance in the sensory study. Thus, it can be concluded that ready-to-use ash gourd chunks with 30 days of shelf life can successfully be produced using chemical pretreatment, *Aloe vera* gel coating, LDPE packaging and frozen storage.

Keywords: *Aloe vera* gel coating, Chemical pretreatment, Fresh cut, Low-temperature storage, Minimal processing