Title Effect of modified atmosphere packaging on shelf life and quality of custard apple (*Annona squamosa* L.) fruits cv. Balanagar stored at 15±1°C

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Abstract

The effect of modified atmosphere packaging (fruits packed in PP bags with 3% O_2 + 5% CO_2 or 3% O_2 + 10% CO_2 or 5% O_2 + 5% CO_2 or 5% O_2 + 10% CO_2 or air) on shelf life and quality of custard apple fruits cv. Balanagar stored at 15 ± 1°C, was conducted at Fruit Research Station, Sangareddy, Dr. YS.R. Horticultural University, A.P. Various physicochemical parameters like PLW, finnness, spoilage, ripening, days taken for ripening, shelf life, TSS, acidity, Brix-acid ratio, sugars (reducing, total and non-reducing) and ascorbic acid were estimated at an interval of 2 days during storage. Fruits packed in PP bags with 3% O_2 + 10% CO_2 recorded significantly lower PLW than control fruits. Significantly the highest firmness was recorded in fruits packed in PP bags with 5% O_2 + 10% CO_2. Maximum days taken for ripening was recorded in fruits packed in PP bags either with 5% O_2 + 10% CO_2 or 5% O_2 + 5% CO_2 or 3% O_2+ 10% CO_2. Fruits packed in PP bags with air or 3% O_2 + 5% CO_2 recorded significantly lower spoilage and correspondingly increased the shelflife upto 12.28 and 12 days, respectively. The control fruits recorded a shelf life of8.5 days only. Physico-chemical parameters like TSS, brix-acid ratio and sugars (reducing and total) were significantly lower in fruits packed in PP bags with 3% O_2 + 10% CO_2 than control fruits indicating delayed ripening. Significantly the highest acidity was recorded in fruits packed in PP bags irrespective of concentration of O_2 + CO_2 or air. Significantly the lowest non-reducing sugars and highest ascorbic acid were recorded in fruits packed in PP bags with 3% O_2+ 10% CO_2 or 5% O_2+ 5% CO_2 or 5% O_2+ 10% CO_2 or 3% O_2+ 5% CO_2.