

The Relationship of Flesh Softening to the Respiratory Climacteric, Ethylene Production and Ammonia Accumulation

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Abstract. In preparation for future studies to evaluate the relationship between the development of chilling injury and ammonia ($\text{NH}_3\text{-NH}_4^+$ accumulation, we examined the relationship between flesh firmness (mesocarp tissue), respiration (CO_2), ethylene production (C_2H_4) and $\text{NH}_3\text{-NH}_4^+$ concentration during normal ripening at 20C.

The changes in CO_2 and C_2H_4 content in two avocado cultivars, 'Fuerte' and 'Hass' relative to softening were comparable. The increase in CO_2 and C_2H_4 occurred gradually during the course of softening. The respiratory climacteric and the peak of ethylene production did not occur until the fruit were fully ripe (eating ripeness). There was no clear relationship between $\text{NH}_3\text{-NH}_4^+$ levels and changes in flesh firmness although there was an apparent increase in $\text{NH}_3\text{-NH}_4^+$ which roughly paralleled the rise in C_2H_4 and CO_2 production.