

CHAPTER 1

Post-harvest management strategies towards enhancement of disease management in horticultural crops

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ABSTRACT

Effective post-harvest techniques allow agricultural sector to fulfil the global demands by retaining the required nutritional quality of horticultural produce. To enhance post-harvest quality of harvested produce, which are in a state of ripening, undergoes senescence and metabolically active must be taken care of by practicing efficient methods, otherwise it would result into significant financial loss. Effective post-harvest techniques primarily focus in limiting the rate of metabolic process resulting in delay of senescence, maturation and minimizing the risk of microbial contamination. A variety of management practices including physical, chemical and gaseous treatments have been introduced. Physical treatments include irradiation, edible coatings and heat. Chemical treatments comprise of antioxidants, applying suitable antimicrobials. Temperature management has been a classical practice. This study focus on the prevailing status of post-harvest techniques including the use of ozone and plasma, resulting in maintaining quality and reducing loss of fresh produce.

Keywords: Post-harvest, nutritional quality, senescence, irradiation, edible coating, antioxidants.

1.1 INTRODUCTION

Horticultural produce are rich in nutrients, however during post-harvest storage they are prone to various metabolic reactions resulting in their decay. To overcome this situation, well coordination from the level of farmers up to the consumers needs to be maintained. The level of this coordination varies, usually slack at local level and highly complex at global level depending on the ease of adopting efficient post- harvesting strategies. According to the Food and Agriculture Organization (FAO), 33% of global food was wasted on the weight basis during 2009 (Lipinski *et al.* 2013). Essentially, reducing food losses is