

Title The potential of a cool chamber storage facility for enhancing the shelf life of fresh fruit and vegetable produce at Adet, Amhara Region, Ethiopia

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Abstract

In Ethiopia, post-harvest loss of fruit and vegetable products is substantial. Cognizant of this problem, a cool chamber storage structure was adopted from India and evaluated under Adet's climatic condition in the year 2001/02. The chamber was constructed out of locally available materials like bricks, bamboo, grass, polyethylene sheet. A known amount of fresh fruits and vegetables were stored in plastic crates inside the chamber while equivalent amount of the products was kept at room temperature as a control. The chamber was watered twice, a daily in the morning and evening, to maintain the required temperature and humidity. The temperature and relative humidity of the chamber was monitored using a thermometer and hygrometer, respectively. Data was recorded on damage and loss of products in the course of experimentation. Results revealed that banana can be stored safe for more than 13 days from date of storage, orange (Washington Navel Variety) kept more than two weeks while mandarin stored safe for 18 days. Avocado could be stored safe for a week period of time. In case of vegetables, no damage was recorded in green pepper within nine days from storage and some 66% were still edible until the 23rd day. There was also no physiological weight loss in green pepper in the cool chamber until the fifth day. A local variety tomato harvested at a color breaking stage could be stored safe for two weeks while carrot (Nantes variety), kept three weeks with only 9% damage in the cool chamber. The cool chamber could also reduce the maximum temperature that could be intercepted otherwise by about 11 deg C and 14 deg C as compared to the room and air temperatures, respectively. Also the average relative humidity could be maintained above 85% in the cool chamber. In general, the cool chamber facility appeared to be a

potential technology for extending the shelf life of fresh produce. The facility needs to be evaluated at different environments before promoted for use.