

Identifying loses of vitamin-C and moisture content during storage of leafy vegetables

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ABSTRACT

Leafy vegetables are an important source of vitamin 'C'. Considerable losses may occur during storage, as vitamin 'C' is relatively unstable and easily oxidized. The vegetables are required to be kept in cool temperature to retain vitamin 'C'. The investigation was undertaken with an objective to find out losses in vitamin 'C'. The moisture content of leafy vegetables was undertaken when vegetables were stored in cooling devices for one week. Investigation was undertaken in College of Home Science, Marathwada Agricultural University, Parbhani. For this investigation cooling device was developed. It was observed that maximum losses of moisture content and vitamin C content occurred in spinach and coriander stored in control conditions. The minimum loss of moisture content and vitamin C was observed when spinach and coriander leaves were stored in cooling devices (models) up to seven days storage period.

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Key Words : Cooling devices, Vitamin C, Moisture content

INTRODUCTION

Leafy vegetables are an important source of vitamin 'C' in Indian diets. Considerable loss of vitamin 'C', which is relatively unstable and easily oxidized, was observed during storage of vegetables. They need to be kept in cool temperature. Green leafy vegetables lose more than 50 per cent vitamin C on storage (Ranganathan, 1996).

Moisture is a major factor contributing to the loss of vitamin 'C'. There is positive relationship between retention of vitamin 'C' and moisture content in green leafy vegetables stored in refrigerator. This was observed during the study of effect of house hold storage methods on ascorbic acid level in relation moisture content in green leafy vegetables (Varghese and Umopathy, 1997).

Nutrient losses in most of the leafy vegetables can be minimized if these are stored in just above freezing temperature. It is also necessary to find out some cheap cooling device for household vegetable storage using inexpensive technique of evaporative cooling to reduce the temperature and build up humidity to control the transpiration losses. The investigation was undertaken with an objective to find out losses in vitamin 'C' and moisture content of leafy vegetables was undertaken when vegetables were stored in cooling devices for one week.

METHODOLOGY

Present study was conducted in cool and well ventilated room for seven days in College of Home Science, Marathwada Agricultural University, Parbhani (peak summer).

Development of cooling devices :

A simple technique regarding the temperature and building up the humidity to control the transpiration losses was used to develop the cooling devices. Based on the principle of evaporative cooling, five different models were made using locally available materials. The basic frame of square prism shape having 40 x 70 sq cm area was made from bamboo sticks. Water holding trays of 18 gauge aluminum sheet were made of size 41 x 41 cm with a depth of 5 cms. At the bottom of the tray, 4 mm diameter holes were drilled adjacent to exterior material of the frame. These trays were placed on top of basic frame. Exterior material of sides each of 40 x 60 cm size were prepared from gunny cloth (A), gunny bag with charcoal (B), Khus curtains (C), gunny bag with spagum moss (D) and desert bag cloth (E).

Vegetable selection :

Two leafy vegetables such as spinach (*Spinacia*