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PHYSIOLOGICAL CHANGES IN CASSAVA TUBERS

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ABSTRACT: **The present study was carried out to evaluate cassava genotypes for Postharvest Physiological Deterioration (PPD). Tubers from different genotypes were evaluated at 1, 2, 3, 4 and 5 days after harvest for PPD. Two genotypes *viz.,* CI 850 and YTP 1 showed their supremacy in recording low levels of PPD (9.81 % and 11.76 % respectively) even five days after harvest. This could be the result of lowercyanide (HCN) content. Starch content was decreased at storage.This study can be used to understand the physiological mechanisms of PPD in cassava tubers.**

Keywords: *Cyanide, image analyzer, postharvest physiological deterioration, starch*

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INTRODUCTION

Cassava (*Manihot esculenta* Crantz) is an annual tuber crop growing widely in tropical and sub-tropical areas. Cassava has an efficient use of water and soil nutrients and tolerance to drought and sporadic pest attacks and it can produce reasonable yields in areas with poor soils and unpredictable rainfall. The roots of cassava are very rich in carbohydrates, which makes them an important source of dietary energy. Its starch content ranges from 20 to 35% based on fresh weight and about 80.6% based on dry weight with 38.6% total dry matter. Cassava tuber market price is fixed based on the starch content. However, the short shelf life of the tuber (24 hours) limits cassava's economic and industrial potential. Even though cassava has been already identified as a superior and high productive crop for future climate change condition, Postharvest Physiological Deterioration (PPD) is the major problem due to its short shelf life. So, during the period of higher demand or supply to the market, storage becomes the major problem.PPD in cassava is rapid, begins within 24 to 48 hrs after harvest and can result in losses in the range of 40 – 60 per cent of the total expected economic value of the crop. This study highlights to identify the tolerant cassava genotypes for PPD based on physiological evaluations.

MATERIALS AND METHODS

Plant material

Cassava genotypes were collected from the Tapioca and Castor Research Station, Yethapur, Tamil Nadu, India. Cassava tubers from twelve month old plants were harvested by digging the rhizosphere area and carefully removingthe roots from the soil to avoid any wounding.