

SEQUENCE OF OCCURRENCE OF MICROFLORA IN STORED CASSAVA TUBERS

Cassava tubers are susceptible to rapid spoilage under storage conditions. Spoilage is hastened due to improper harvesting and handling. The present study was undertaken to identify the microorganisms which are causing spoilage of stored cassava tubers.

Samples of fresh cassava tubers of different varieties were collected from markets in Trivandrum city and these were pooled for storage under godown conditions for a period of seven days.

The fungi associated were identified as *Rhizopus arrhizus*, Fischer, *Mucor hiemalis* Wehmer, *Botryodiplodia theobromae* Pat, *Aspergillus niger* Van tiegh, *A. flavus* Link ex Fries and *Fusarium* sp; besides several other saprophytic fungi. The bacteria included *Bacillus subtilis* cohn. and *Enterobactor aerogenes* (kruse) Horna-eche. Actinomycetes were not observed.

The primary deterioration commences immediately after harvesting and becomes visible in less than 48 hours. At this stage tubers develop bluish vascular streaks which are mainly due to biochemical and physiological changes. The primary deterioration is soon followed by secondary deterioration incited by microbes as reported by Booth (1976).

Among the microorganisms, *R. arrhizus* and *M hiemalis* occurred as the initial colonizers and this was followed by *Aspergillus* Spp, and *Fusarium* Sp. *B. theobromae* made its appearance only at the terminal stages of rotting by the fifth day and by seventh day it completely enveloped the tubers with its luxuriant mycelial and pycnidial growth.

Bacteria were observed only in the final stages of deterioration. As a result of infection, tubers became soft, discoloured and brownish with an unpleasant odour.

Artificial inoculations on fresh tubers by the fungi singly as well as in combination produced similar symptoms and proved all of them to be pathogenic.

Among the microbes, bacteria, yeasts and fungi like *Penicillium* and *Rhizopus* have already been reported to cause spoilage of potato tubers (Amala and Sankar, 1975), while Balagopal *et al.* (1980; reported *Rhizopus oryzae* as the only pathogen responsible for storage spoilage of cassava tubers.

References

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