

# **STUDIES ON FERMENTATION OF CAPSICUM**

**By**

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## ABSTRACT

*Capsicum annum* L. (Local name- Malu Miris) is a vegetable that is consumed in fresh or cooked form. Fermented Capsicum is not available in the local market yet and it could be a new product if introduced into the local and export markets.

The basic idea behind the preservation of capsicum by fermentation is to increase the shelf – life. Generally the vegetables are fermented using two techniques; dry salt method and brine solution method (wet method). In dry salt method the salt was mixed with the vegetable whereas in brine solution method the salt solution was added to the vegetable.

The objectives of the present study were to detect the suitable salt concentration and suitable method for natural fermentation of capsicum, study the microorganisms involved in the fermentation and finally to prepare a marketable product.

During the preliminary experiments capsicums were fermented with different salt concentrations such as 2%, 3%, 4%, 5%, 5.5% and 6%. Salt was taken as uniodide and iodide. Capsicums were taken as washed and unwashed. Fermentation was carried out using the dry salt method and the wet method with tap water and boiled water. Each salt concentration was tested with five replicates. pH, acidity, yeast growth and visual observations were recorded .

According to the results 5% salt concentration of dry method showed highest acidity and lowest pH than the wet method in which the same was observed with 5.5% salt concentration. When unwashed samples and washed samples were compared washed samples gave better results. Capsicum samples fermented with iodide salt gave similar results with the capsicum samples fermented with uniodide salt.

Microbiological experiments were carried out for fresh, fermenting and bottled fermented capsicum. In this 5% salt concentration was taken for dry method and 5.5% for wet method. Two replicates were carried out.

The microorganisms involved in fermentation were *Leuconostoc mesenteroides*, *Lactobacillus plantarum*, *Lactobacillus fermentum*, and *Pediococcus pentosaceus*. The heterotrophic organisms present were *Enterobacter cloacae*, *Citrobacter freundii*, *Micrococcus luteus*, *Micrococcus roseus*, *Micrococcus varians*, *Aerococcus viridans*, *Pseudomonas flava*, and *Pseudomonas pseudoflava*. Two types of yeast species were also detected and they were belonging to Genus *Saccharomyces*. Yeast species were present throughout the fermentation. No microflora were detected in bottled fermented capsicum when tested up to six months.