

INCREASE OF SHELF OF DECOCTION  
BY PASTEURIZATION AND STERILIZATION  
(TRIPALA QUATHA)

by

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award of degree of Master Science in food Science &  
Technology in 2006

## Declaration

The work described in this was carried out by me under the supervision of prof: A. Bamunuarachchi and Dr. K.K.D.S. Ranaweera and a report on this has not been submitted in whole or in part to any other institution for another Degree / Diploma

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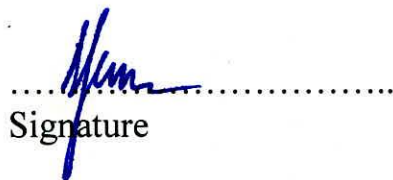
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We certify that the above statement made by the candidate is true and that this thesis is suitable for submission to the University for the purpose of evaluation.



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## **Abstract**

Almost all ayurvedic drugs are of herbal nature and make significant contribution in many fields including food technology. After harvesting, raw materials may undergo spoilage due to metabolic changes, mechanical injuries pest attacks etc. Spoilage can also be resulted soon after the processing or due to exposure of products to the environment.

Similarly decoctions can be spoiled after 2-3 days from the preparation date becoming sour in taste. These preparations can be of different quality and may be harmful for patients.

Therefore, finding a method or a technique which can be used to extend the shelf life of these products is of primary significance. A study was carried out to investigate factors affecting the spoilage of thripala, one of the most popular decoctions prescribed for many health complications. In this study, a special emphasis was given to shape of containers, cleanliness of raw materials and different heat treatments in order to minimize the spoilage.

Hence, the decoction was prepared in good hygienic conditions and was hot filled into glass bottles which were subsequently sterilized by steam.

The drug can be preserved for one-month period when the bottles were filled by hot filling method. The decoction is heated to 95 °C and filled into the sterilized narrow mouthed bottles keeping the temperature at 95 °C and sealed. Under proper sanitary storage conditions these bottles can be stored for more than two weeks. These sealed bottles subjected to steaming have extended the shelf life for one month.

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# CHAPTER - 01

## Introduction

Sri Lanka is one of the developing countries which has poorly developed pharmaceutical manufacture in both Ayurvedic and allopathic system of medicine. Therefore the country requirement is mainly met by the neighboring countries and for this purpose Sri Lanka's foreign exchange is lost considerably. This can be reduced if the drug manufactures. Duty specially the traditional drug manufacturer rule tends and applies appropriately devoted modern process technology.

Ayurveda is one of the oldest systems of the world. Ayurvedic physicians preferably like to dispense drugs prepared by their own hands. They do not rely upon the products manufactured by pharmaceutical industries. Rapid civilization, explosive growth rate of population, massive deforestation has made the physicians handicap and to depend upon pharmaceutical industries. Due to commercial orientation and increasing demand of natural products few pharmacies are preparing unethical products which result an embarrassing position for physicians and patients. In order to overcome these problems there is a need to implement certain standards for these natural products, which are easily adaptable and implementable to overcome the crisis.

The process of manufacturing medicines from raw ingredients to finished products requires a degree of control that is probably unequalled in any other industry. The role of the microbiological specification is to provide a standard for pharmaceutical preparation to ensure its safety for use. The microbiological controls for non-sterile and sterile product are different. The microbiological control has the same importance as the physical and chemical quality control. To gain a proper understanding of the source of microbial contamination, it is necessary to control microbes various stages of manufacturing and for each stage. To identify