

**A STUDY ON THE APPLICABILITY OF CENTRIFUGE  
FILTRATION FOR PRODUCTION OF AYURVEDIC  
ARISHTA AND ASAVA**

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Engineering in Manufacturing Systems Engineering

Department of Mechanical Engineering

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Sri Lanka

April 2019

## **DECLARATION**

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where acknowledgement is made in the text.

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## **ABSTRACT**

Arishta and Asava are kind of herbal wines which are manufactured by natural alcoholic fermentation process, and used in the countries where traditional Ayurveda or indigenous medical systems are established. Fermentation and sedimentation are two major processes in herbal wine manufacturing. Natural fermentation process in ayurvedic Arishta and Asava preparation takes nearly 30days whereas this period of some wines spans to one year or more. In natural fermentation, alcohol is self-generated and this process is not induced by adding artificial accelerators to enhance the process. Sedimentation process of ayurvedic Arishta and Asava takes nearly 7-8days period and this process also is allowed to complete naturally. With the completion of fermentation process, bigger suspended particles precipitate slowly due to gravitational force and specific gravity will become stable at the end of the sedimentation process.

In Sri Lanka and India, it is very difficult to find a manufacturer who adopts any process improvement technique to enhance fermentation process or sedimentation process in production of ayurvedic Arishta and Asava. Productivity improvement of these medications without violating the traditional medicinal quality has become vital important due to increase global trend towards usage of ayurvedic Aristas and Asavas and compliance of regulatory requirements in addition to achievement of desired organizational objectives. The aim of this research is to study and verify the applicability of the centrifuge filtration method for production of Arishta and Asava. Proposed centrifuge filtration method has been focused to ayurvedic Arishta and Asava medications.

Research methodology is mainly based on experimental techniques, data analysis and conclusions derived from findings of the literature survey. The research has focused on determination of physiochemical parameters of ayurvedic Arishtas and Asavas, study on different filtration and centrifugation methods, analysis of TLC profiles of selected Arishtas, determination of optimum fermentation and sedimentation times of selected ayurvedic Arishtas. Experimental results of TLC profiles of Aswagandha Arishtaya and Nimba Arishtaya revealed that qualities of end products with natural sedimentation are similar to those with centrifuge filtration. Also, case study-1 and case study-2 carried out under the research verified that the adoption of centrifuge filtration for clarification of ayurvedic Arishtas and Asavas is viable method instead of relying on time consuming natural sedimentation process. Based on the research findings, it is recommended to adopt centrifuge filtration method for production of ayurvedic Arishtas and Asavas.

**Key words:** Arishta, Asava, Fermentation, Sedimentation, Centrifuge Filtration

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