

Research Paper :

Process standardisation and selection of a method of drying for the industrial production of rasona ksheerapakam a dairy based nutraceutical

P. SUDHEER BABU, R. UDHAYA KUMAR, R. RAJENDRA KUMAR AND S.N. RAJA KUMAR

Accepted : September, 2009

See end of the article for authors' affiliations

Correspondence to:
P. SUDHEER BABU
Kerala Agricultural University
Dairy Plant, Mannuthy,
THRISSUR (KERALA)
INDIA

ABSTRACT

In order to identify and standardize the unit operations in the industrial production of Rasona Ksheerapaka -a dairy based nutraceutical, an investigation was carried out. Study was also carried out to select the appropriate method of drying of the product. After conducting trials on popular industrial methods such as roller drying, cabinet drying and spray drying, sensory evaluation of the resultant product was carried out. The spray drying method was selected as suitable one for the industrial production of Rasona Ksheerapaka powder.

Key words : Process standardisation, Nutraceuticals, Spray drying

The nutraceuticals or the functional foods are majorly plant-based products and most of them being predominantly herbal. Hence, clues to these nutraceutical products could be got from our ancient and traditional systems of medicine like Ayurveda and Siddha. Therefore, there is ample scope for India to develop a range of nutraceutical/health food products based on our traditional knowledge base in Ayurveda. And to succeed, these products have to be standardized with scientific validation to ensure safety and efficacy so as to instill confidence in the customers to use them.

Ksheerapakam is one of the most important and unique preparations found in Ayurvedic system, where milk is used as the medium of extraction of herbal medicinal components. Rasona Ksheerapakam, the product subjected in the present study is basically considered as a cardiac tonic.

Assessment of the existing methodology for manufacture of Ksheerapakam:

As per the standard procedures mentioned in the ancient texts of Ayurveda, there are different types of methodologies available for the production of Ksheerapakam. In all these methods, the herbal ingredient is allowed to boil in milk along with water, for the purpose of extraction. One method of medicated milk preparation consists of boiling one part of prescribed drug with 8 parts of milk and 32 parts of water (1:8:32). Another method of preparation of medicated milk is by providing one part of drug, 15 parts of milk and 15 parts of water (1:15:15). The mixture is then subjected to mild heating till the volume is reduced to that of the initial volume of milk.

Limited shelf-life of Ksheerapakam:

As the process of extraction is carried out by using milk as the extracting media, the Ksheerapakam preparations need to be prepared on a daily basis. While administering this drug for various ailments, Ayurveda physicians found it relatively impractical, as the patients in the modern busy world are unwilling to carry out the lengthy and laborious preparatory procedures of the medicine.

METHODOLOGY

Identification of the unit operations involved in the preparation of Rasona Ksheerapakam:

The conventional method of preparation of Rasona Ksheerapakam was observed at some of the traditional Ayurvedic medicine preparation units. The method of preparation involves boiling milk along with the drug, garlic in an open pan under direct flame using firewood. Manual scraping was carried out to get a uniform heating and also to prevent burning of the milk in the pan. The method of preparation was found both labour intensive and energy intensive. An alternative mechanism for boiling milk with less labour involvement and reducing energy requirement will help in getting a consistent uniform quality product and also enable mass production of the product. Boiling the milk along with the drug, garlic forms one of the main unit operations involved in the preparation of the product. Since the product is milk based the storage of the product under ambient conditions is difficult. In order to improve the keeping quality of the product under ambient conditions converting the product into powder form by employing some drying technique is the only alternative. Hence