Efficient Extraction, Comparative Evaluation and Shelf Life Study Through Nano-Encapsulation of Functional Compounds in Ginger

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ABSTRACT/SUMMARY

This PhD research project is focused at the functional food ingredients in ginger, their maximum extraction using a competent extraction technique, comparative study of various available ginger varieties based on cultivation region and storage conditions, to utilize nano-encapsulation technology for shelf life extension and controlled delivery of potential functional ingredients. Nano-encapsulated compounds further will be utilized in functional food development for their effective employment studies

Diagram: Research Work Carried Out in First Year

INTRODUCTION

Functional foods have proved their worth due to their health promoting properties. Ginger contains two bioactive compounds (gingerol and shogaol) having a variety of functional and nutraceutical properties. There are lot of variables that affect the concentration, stability and availability of the functional ingredients such as varieties of the bio-material, cultivation, storage conditions and extraction methods. After catering with these variables, nano-encapsulation technology can also be employed for the advancement of shelf life and stability of efficiently extracted bioactive compounds.

OBJECTIVES AND MILESTONES

- Development of efficient extraction technique for bioactive compounds in ginger
- Comparative study of ginger based on its varieties, cultivation and storage conditions
- Analysis and evaluation of bioactive compounds extracted from ginger
- Shelf life and stability study of free and nano-encapsulated bioactive compounds
- Development and Assessment of functional food product

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