

# Technology for Successive Water Extract of Ginger (NR-Ginger) for Cholesterol Management



## Technology Description

Under this project, for the first time, we have developed a process for preparation of an extract from the byproduct of oleoresin extraction of ginger. This extract was further fractionated to achieve desired bioactivity and water solubility. In lab animal models, the extract showed comparable cholesterol lowering activity to statins. This is being positioned as a unique extract of ginger in the international

Name Of institute:  
OUAT (Bhubaneshwar, Odisha);  
NATURAL REMEDIES (Bangalore, Karnataka)  
Stage of development:  
Ready for Commercialization

Scientific Experts:  
Dr. Amit Agarwal,  
Dr. Deepak M,

## Background

The global market for plant-derived drugs was worth an estimated \$18 billion in 2005<sup>1</sup>. As per an estimate of WHO, the demand for medicinal plants is likely to increase more than US\$5 trillion in 2050. In India, the medicinal plant-related trade is estimated to be approximately US \$1 billion per year<sup>2</sup>. 1. BCC research, 2006, Plant-derived drugs: Products, technology, applications 2. Chandra PK et al., Journal of Ethnobiology and Ethnomedicine, 2006: August: 1-15

## Benefits / Utility

Primary producers (farmers/growers) Food and beverage industry Nutraceutical formulators People with high cholesterol levels Employment generation for local people Revenue generation to Government and to all stake holders in the ginger value chain

## Country Context

India

## Scalability

Yes, the technology is scalable. The company already has a business model wherein standardized extracts are manufactured in a commercial facility having the capacity to process > 5 tons of herb per day. Since the scale up concepts and standard operating procedures are already available, there is room for expanding the facility further in future to accommodate larger demands.

## Business and Commercial Potential

For purpose of cholesterol management. Additional revenue to primary producers (farmers/growers) as this grade of ginger extract is prepared after extracting the gingerols (utilization of byproduct). Inclusion in food and beverage due to its water soluble nature. Economical product for end consumers as it is developed from a

## Potential investors to this technical innovation

Food and beverage industry Nutraceutical formulators Natural FMCG manufacturers Herbal cosmetic companies Phytomedicine



Dr. H. N. Atibudhi,  
hnatibudhi@rediffmail.com +91 93371 01258.  
Dr. Amit Agarwal,  
amit@naturalremedy.com +91 9845008951

## Financials

Quantum of Financial Investment Required: It depends upon the scope of the commercial business operation. Approximately a further investment of Rs. 2.50 crores to Rs. 3.00 crores in R&D and an investment of Rs. 5.00 crores in production facilities can significantly enhance the commercialization prospects of the technologies developed under this project.

Amount of business volume for the technologies developed under this project:\* As such (without any further scientific work) – Rs. 2 crore to Rs. 3 crores per annum After adequate amount of scientific support Rs. 10

## Target Market / Customer

Excellent Choice for incorporation in Dry drink mixes, Ready-to drink products, Beverages, Candies and Nutritional bars. Potential Market: Food and beverage industry Nutraceutical formulators Natural FMCG manufacturers Herbal cosmetic companies Phytomedicine

## Limiting factors for large scale commercialization

Supply of ginger raw material at affordable cost (premium price can be paid only for premium / elite quality raw material) Mass scale cultivation of elite quality of ginger along with proper post harvest technology with reference to gingerol content. Upgradation of primary processing units for adequate drying and size reduction of dried rhizomes Adoption of continuous extraction technology for high throughput production Undertaking further research to demonstrate clinical efficacy and safety of the extract for management of cholesterol.

## Social impact of the technology

Benefits to primary producers (Farmers/Growers) Employment generation Awareness of health benefits from ginger and ginger products For maintenance of healthy cholesterol levels in the affected population Additional revenue generation for all stake holders

