



Process Technology for Ginger Extract as a free flowing powder (Standardized to > 30% w/w)

Technology Description

Under this project, for the first time, we have developed a special process by which we are able to produce a standardized ginger extract having > 30% w/w total gingerols in a free flowing powder form.

Ginger extracts having high gingerol content are preferred in the market as small quantities are sufficient to deliver the required therapeutic effect in the nutraceuticals / dietary supplement industry.

Similarly such extracts are preferred as small quantities are sufficient to provide the required flavoring / pungency in the food and beverage industry.

Additionally, the free flowing nature of the extract prevents the handling losses which are generally very high when the ginger oleoresin is in the form of a sticky thick paste.

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

Scientific Experts:
Dr. Amit Agarwal,
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Background

The global market for plant-derived drugs was worth an estimated \$18 billion in 2005. 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.

Benefits / Utility

- § Primary producers (farmers/growers) § Food and beverage industry
- § Nutraceutical formulators § 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

Business and Commercial Potential

§ Highest gingerol content available in powder form in India (usually the ginger oleoresin is available only in paste form up to 15% w/w total gingerols).

§ Convenient to handle for further processing. § Minimal handling loss due to free flowing powder form. § Minimal quantity needed due to high

Potential investors to this technical innovation

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



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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

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

§ Regular availability of raw ginger of elite quality (having a total gingerol content of > 1.5 % w/w or better) § 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 § Focused

Social impact of the technology

§ Benefits to primary producers (Farmers/Growers) § Employment generation § Awareness of health benefits from ginger and ginger products § Additional revenue generation for all stake holders in the

