



A green strategy for the development of debittered dietary fibre rich edible powder from kinnow juice industry waste and uses thereof

TECHNOLOGY AVAILABLE FOR TRANSFER

UNMET NEED AND OPPORTUNITY

The kinnow juice industry generates a significant amount of waste, with kinnow pomace (peel, rag, seeds, and pulp residues) accounting for 55-60% of the fresh fruit weight. This waste is typically discarded or used as animal feed, but it represents a valuable source of dietary fiber, antioxidants, and other nutraceuticals. However, the high bitterness and moisture content of kinnow pomace make it difficult to utilize directly in food products.

STAGE OF DEVELOPMENT

From Lab to Reality: The technology has successfully undergone laboratory validation. A process has been developed to debitter kinnow pomace using naringinase and protease enzymes, resulting in a fiber-rich powder with a bland flavour, and antioxidants. This powder can be incorporated into various food products as a natural source of dietary fiber. Currently, the process is in the stage of field trials, bringing us one step closer to revolutionizing the use of kinnow juice industry by-products.

INTELLECTUAL PROPERTY

Indian Patent filed

UNIQUE SELLING PROPOSITION

- **Natural and eco-friendly:** Derived from kinnow juice industry waste, reducing environmental impact and waste disposal costs.
- **High dietary fiber content:** Provides a valuable source of dietary fiber, promoting digestive health and satiety.

- **Nutraceutical properties:** Rich in antioxidants and other beneficial compounds, offering potential health benefits.
- **Bland flavor:** Enzymatic debittering process eliminates bitterness, making it suitable for various food applications.
- **Circular Economy:** Embrace sustainability with our technology. The water used in the process is recovered and reused through an efficient membrane filtration system. This not only minimizes waste but also highlights our commitment to a circular economy.

TECHNOLOGY

The process involves two steps:

Naringinase treatment: This converts bitter naringin compounds into less bitter prunin and rhamnose.

Protease treatment: This enhances the purity and quality of the fiber-rich residue.

The resulting powder is dried and ground into a fine powder that can be easily incorporated into food products.

This technology has the potential to reduce food waste and improve the nutritional value of food products

LICENSING OPPORTUNITY

BCIL is looking for suitable industrial partner for commercialization of this technology Invest in Sustainable Innovation, Harvest Healthier Choices.

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