

TECH OFFER

Sustainable And Zero Waste Process For Plant Oils And Fats



KEY INFORMATION

TECHNOLOGY CATEGORY:

Foods - Ingredients

Foods - Quality & Safety

Foods - Processes

TECHNOLOGY READINESS LEVEL (TRL): **TRL9**

COUNTRY: **SINGAPORE**

ID NUMBER: **TO174124**

OVERVIEW

A sustainable mechanical-based processing line that works with a variety of plant ingredients to produce solvent-free and chemical-free oils and fats together with high protein and fibre powder. The protein and fibre content depends on the type of plant used.

This processing method is currently on pilot scale of 1 tonne per hour approximately and can be scaled much higher for mass industrial requirements.

The company is seeking for partners to scale up their processing method and/or strategic partners to enter into a joint venture.

TECHNOLOGY FEATURES & SPECIFICATIONS

This unconventional zero-waste technology works with a range of different plant materials to produce pure oil and single ingredient protein powder. Instead of solvents and petroleum based extraction processes, this proprietary method uses only low heat mechanical processes to achieve the end result.

It has an excellent mouthfeel for the powdered products lending to multiple applications in food, beverage and cosmetic industries. The highly automated process ensures maximum cost effectiveness, scalability and minimal human interaction/contamination risk with the product.

Non-chemical deodorisation can also be applied to certain oils if desired.

Examples plant material successfully tested includes almonds, sesame, coconut, sacha inchi, cacao

POTENTIAL APPLICATIONS

- Plant-based Clean Label Whole-foods
- Plant-based Protein – Protein boost in plant-based functional beverages, bars, prepared meals
- Confectionery Ingredients – Dairy alternative ingredient for milk chocolates and ice-cream / Plant-based, fibre-rich frosting / Dairy alternative ingredient for muesli and cereal blends
- Bakery Ingredients - Fibre-rich nutritional supplement for baked goods / Protein boost in plant-based functional biscuits and cakes / Low GI specialty baked goods
- Skincare – pure cold pressed oils can be used in cosmetic and cosmeceutical applications

MARKET TRENDS & OPPORTUNITIES

Waste Valorisation

Zero-waste Processing

Sustainable Processing

Minimal Processing

Clean Label

Plant Based

BENEFITS

- Transparency - Customers get clean label single-ingredient products they can trust
- Healthy - Hexane and solvent free processing for their fats and oils
- Variety - A wider range of high-quality plant-based ingredients means consumers can replace more of the protein and fat they currently obtain from animal sources
- Food safety - Highly automated process so that there is minimal human contact (and risk of possible contamination) with the food products
- Sustainability – Zero-waste processing means no part of the ingredient ends up as a by-product, everything is premium

human consumption grade