TECH NEED

Seeking Solutions For De-oiling of Processed Food Waste Substrate

KEY INFORMATION

TECHNOLOGY CATEGORY:
Sustainability - Circular Economy
Sustainability - Food Security
Waste Management & Recycling - Food & Agriculture Waste Management

TECHNOLOGY READINESS LEVEL (TRL): TRL5 TO TRL7
COUNTRY: SINGAPORE
ID NUMBER: TN174489

BACKGROUND/DESCRIPTION

In 2023, Singapore generated approximately 755,000 tonnes of food waste, with only 18% recycled, underscoring the urgent need for innovative waste management strategies. The nation's Zero Waste Master Plan have significantly propelled efforts to transform food waste into valuable resources. Food waste valorisation involves pre-processing steps like drying, microbial fermentation, or enzymatic breakdown into biomass which can convert nutrients into suitable ingredients for animal feed, food ingredients and biofuels.

A significant technical challenge arises for companies handling heterogeneous municipal food waste in Singapore due to its high oil content. The presence of oil may potentially lead to fouling, clogging of processing equipment, reducing processing efficiency. On the contrary, oil is also a valuable ingredient for biofuel. Therefore, the company is seeking for solution providers who can de-oil from the biomass.

TECHNOLOGY SPECIFICATION

Given these considerations, there is interest to seek for technologies that are able to de-oil such food waste substrates. The method should ideally:

- Be able to reduce the oil content from 15-18% to roughly 8% or lower
- Be economically viable and scalable
- Allow the processed substrate to still be safe for use as animal feed or even as food ingredients
- Have a relatively small footprint and be deployable at food waste generation site

WHAT WE ARE NOT INTERESTED IN

- Methods that employ the use of heat like hot screw pressing which damages the substrate
- Complex multi-step processes
- Non-commercially ready proposal

PREFERRED BUSINESS MODEL

- IP Acquisition
- Licensing
- R&D Collaboration