Rich Bioactive Compounds Of Polygonum Minus (Kesum) Biowaste After Hydrodistillation

PATENT NO. PI 2023001189

Hydro-distillation of Polygonum minus process gives oil and biowaste.

BRIEF TECHNOLOGY

The invention is a process used to obtain rich bioactive compounds of Polygonum minus in biowaste after hydrodistillation. Commonly, the biowaste was thrown away after hydrodistillation to obtain the P. minus oil.

The biowaste was recovered and analyzed for its composition and biological activities. The biowaste were recovered and profiled for active compounds which possess high antioxidant, and antimicrobial activities and are safe for consumption.

CURRENT ISSUES

- Currently, P. minus oil has been used as highly valued ingredient for nutraceuticals, cosmetics and food essences which have high biological activities.
- The biowaste was thrown away after P. minus oil extraction using hydrodistillation.

INVENTIVENESS & NOVELTY

- These bioactive compounds from P. minus biowaste recovered can be in liquid or powder form which contributes to the high antioxidant, and antimicrobial activities and is safe to be consumed.
- Maximizing the hydrodistillation process, by recovering the biowaste gave potential high values rich bioactive compounds at minimum cost.
- The biowaste recovery gave additional natural ingredients for new efficient natural water-based product discoveries and increase the profit.

USEFULNESS & APPLICATION

- Used as ingredients either in wet or dry form, to improve or increase the antioxidant and antimicrobial activities in products and safe to consume used internally or to apply externally.
- The recovery compound obtained in biowaste after hydrodistillation of P. minus are ;
  - ✓ Rich bioactive compounds – LCMS, GCMS
  - ✓ High antioxidant activities - DPPH, ABTS
  - ✓ Antibacterial activities - bacterial inhibition
  - ✓ Cytotoxicity - MTT assay
- Numerous possible used as ingredients in various products for multiple applications.

IMPACT OF THE PRODUCT

- Rich bioactive compounds from P. minus biowaste are proven to **possess high antioxidant, antimicrobial activities** and are safe to be consumed.
- This **green technology** could be used as an alternative to minimize the use of chemical ingredients, thus promoting an environmentally friendly and sustainable system.

MARKET POTENTIAL

- Food and beverages
- Cosmetic
- Agriculture

Technology Readiness Level (TRL)

4 – Lab validation

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