

KENAF BIO-OIL: AS A NOVEL SPECIALTY OIL WITH HIGH PHYTOSTEROL AND ANTIOXIDANT PROPERTIES

TECHNOLOGY DESCRIPTION

This technology uses low cost kenaf seeds to transform into high value added health promoting product by using optimized super critical carbon dioxide fluid extraction (SFE) process.

PRODUCT FEATURES

SFE process produces environmental friendly Kenaf Bio-oil extraction and free from any residual solvent contamination. The oil is naturally enriched with unsaturated fatty acid (more than 70%), phytosterols and tocopherols. Due to its high bioactive content, this technology actively and effectively exerted multiple health benefits. It is high in tocopherol and shows higher antioxidant activity, high anti leukemia properties as well as helps in chemoprevention of colon and ovarian cancer. Besides that, its blend ratio is excellent for cardioprotection as phytosterol in kenaf bio-oil is a putative cholesterol lowering agent. Moreover, kenaf bio-oil is proven to contain high phytosterol content (6-7%) as compared to prominent commercial oil.

ADVANTAGES

- Value-added health promoting edible oil
- Carrier oil for other bioactive compounds
- Can be used in nutraceutical, cosmetics and other products

INDUSTRY OVERVIEW

Prospects: Phytosterols Market

The global market demand for phytosterols was 49,299.6 tons in 2013 and expected to reach 80,535.9 tons in 2020, growing at CAGR of 7.2% from 2014 to 2020. Europe is the biggest market for phytosterols, accounting for approximately 51% of the global market, followed by North America. The demand of phytosterol for North America and Asia Pacific is expected to grow at CAGR of 6.6% and 6.3% from 2014 to 2020 respectively. In terms of application, food ingredients including supplements and beverages emerged as the biggest application segment for phytosterols, accounted for approximately 51% of the market in 2011. Pharmaceuticals were the second biggest application segment for phytosterols, followed by cosmetics. The global market for phytosterols is dominated by three companies including ADM, Cognis-BASF and Raisio Life Sciences. In Malaysia, the potential of phytosterol is promising as technology valuation on the patented technology of Kenaf Bio-oil extraction worth about USD 3.1 million.



Prof. Dr. Maznah Ismail
Institute of Bioscience
maznahis@upm.edu.my