Introduction

The output from biomass production is rich in high value products from the biomass itself, extracted concentrates and pure individual target compounds. To produce any of these high value products there needs to be a series of processing stages following the initial harvest of the biomass, these are collectively referred to as “down-stream processing” or DSP.

The complexity of the DSP depends upon the products but for maximum flexibility and efficiency the “toolkit” needs itself to be comprehensive. In the D-Factory project we have developed a new and emerging technology in the field of commercial scale processing which has enabled an effective, versatile process tool to meet the needs of sustainable, high efficiency and low environmental impact processing for the future.

The integrated technologies

Initial extraction of the harvested and dried biomass can go via two routes: Supercritical CO2 or organic solvent extraction depending upon the output and target products required. The integrated process streams and technologies ensure all process outputs have value. Waste is minimized or eliminated by recycling internally and energy/carbon footprint minimized through the new and high efficiency process technology developments.

Down Stream Processing: Extraction and Purification Technologies

High Value Target Compounds D. Salina

- Lutein
- Astaxanthin
- Transa Betacarotene

High Value Xanthophyll Targets

High Value Carotenoid Targets

DSP Stage 1: Solvent Extraction System Development Data

Integrated biorefinery process stream for harvested D. Salina biomass

DSP Stage 2: HPCCC (Hydro Dynamic Liquid/liquid Separation Technology)

DSP Stage 3: Isolation/finishing

The integration of these two technology developments enables a compact, flexible and portable processing system for the extraction and purification of high value target compounds from biomass source.

www.d-factoryalgae.eu

Contact details:
david.rooke@dynamicextractions.com
Institution: Dynamic Extractions Ltd
Country: UK