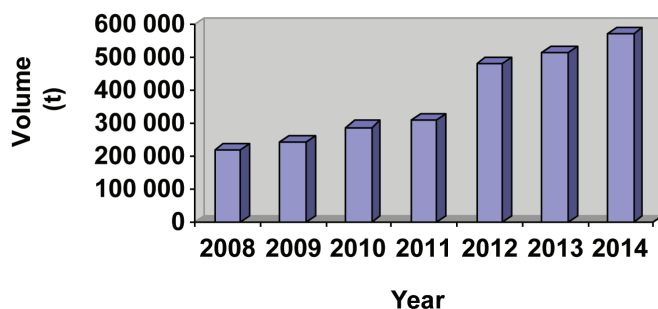


Life Cycle Assessment (LCA) is a good analytical tool to evaluate the performance and environmental impact of all stages of a product's life cycle. In 2014, the exports of methyl ester from Malaysia increased by 10% or 57 041 t to 571 675 t compared to 514 634 t recorded in 2013 (MPOB, 2015). Methyl ester contributed about 20% of total oleochemical exports from Malaysia in 2014. *Figure 1* shows the yearly increment of methyl ester export volume from 2008 to 2014.

Export of Methyl Ester (2008-2014)



Source: MPOB (2009; 2010; 2011; 2012; 2013; 2014; 2015).

Figure 1. Malaysian export of methyl ester, 2008 – 2014.

The increase in methyl ester export was due to the market demand for use as starting materials in the production of several basic oleochemicals and its derivatives. Previously, methyl ester use was limited as intermediates for the production of fatty alcohols. However, with continuous R&D on methyl ester ethoxylates (non-ionic surfactant) and biodiesel in Asia and Europe, methyl ester has become the fastest growing basic oleochemical used. To support market access of oleochemical products, especially methyl ester, it is important to have its LCA profile. More importantly, LCA is site-specific, where the input and output inventories may vary from plant to plant, even when the same production technology is used.

OBJECTIVES

- To identify potential environmental impacts associated with the production of methyl ester at a plant.
- To gauge the greenhouse gas (GHG) emissions from the production of methyl ester.

METHODOLOGY

The system boundary of LCA for the production of methyl ester is set up based on the requirements of the assessment. The assessment follows the ISO 14040 and 14044 requirements.

BENEFITS

- LCA is a recognised tool for gaining credibility in sustainable claims.
- A marketing tool to promote utilisation of palm-based methyl ester globally.
- Market advantage for environmental-friendly products.

SERVICES OFFERED

- Setting of system boundary and functional unit.
- Collection and compilation of inventory data to produce Life Cycle Inventory (LCI).
- On-site verification of data.
- Conducting Life Cycle Impact Assessment (LCIA).
- Interpretation of LCIA results.
- Calculations of the carbon footprint or GHG emissions.

COST

The cost of the service depends on comprehensiveness of the LCA conducted.

CLIENTS

Stakeholders – members of the oleochemical industry, specifically the owners of methyl ester plants.

REFERENCES

MPOB (2009). *Malaysian Oil Palm Statistics 2008*.
MPOB, Bangi.

MPOB (2010). *Malaysian Oil Palm Statistics 2009*.
MPOB, Bangi.

MPOB (2011). *Malaysian Oil Palm Statistics 2010*.
MPOB, Bangi.

MPOB (2012). *Malaysian Oil Palm Statistics 2011*.
MPOB, Bangi.

MPOB (2013). *Malaysian Oil Palm Statistics 2012*.
MPOB, Bangi.

MPOB (2014). *Malaysian Oil Palm Statistics 2013*.
MPOB, Bangi.

MPOB (2015). *Malaysian Oil Palm Statistics 2014*.
MPOB, Bangi.

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