



The Alfa Laval CPO Washing Plant for Tennamaram Palm Oil Mill is built on a skid. It is highly space-saving and can be easily mobilized to other Sime Darby locations.

SIME DARBY R&D TEAM PRESENTS VALIDATED CPO WASHING RESULTS FROM TENNAMARAM PALM OIL MILL

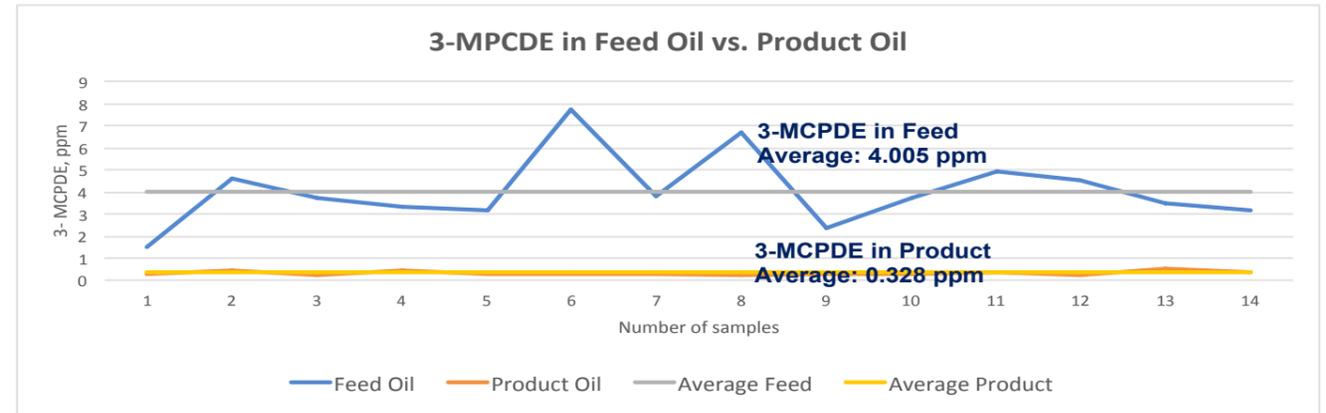
As a fully-integrated palm oil producer that is also the world's largest producer of certified sustainable palm oil (CSPO), Sime Darby has seen the industry through many changes since the early 19th century.

Since February 2017, Sime Darby has started working closely with Alfa Laval, a leading global supplier to the vegetable oil industry on the mitigation of 3-MCPDE and GE. Subsequently, an Alfa Laval CPO Washing Plant was commissioned in November 2017 in the Sime Darby Tennamaram Palm Oil Mill in Batang Berjuntai, Selangor. Frequent sampling and close supervision of the 3-MCPDE level by the Sime Darby R&D team ensued over the next few months.

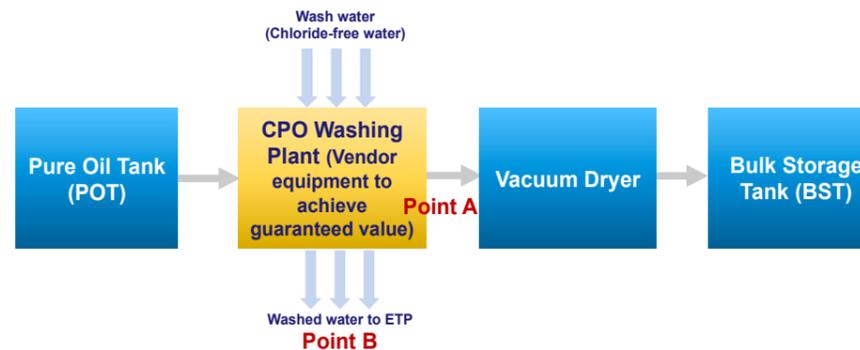
Two quarters later, Sime Darby presented their experience on 'CPO Washing as a 3-MCPDE Mitigation Measure' during the Transfer of Technology (TOT) seminar organized by Malaysian Palm Oil Board (MPOB) on the 3rd July 2018. The main aim of

CPO Washing is to reduce the level of 3-MCPDE by removing the precursor, chloride. According to validated field results from the Sime Darby R&D team, data from the Tennamaram Plant has shown successful chloride removal at 67%, which is higher than the expected performance. This finding is also in congruent with the initial literature which showed that CPO Washing can significantly reduce 3-MCPDE to below 1 ppm under recommended variables.

The CPO Washing plant comprises of Alfa Laval's separator, heat exchanger, several pumps and mixers. However, the separator, where the main separation and 'washing' action takes place is the heart of the entire plant. In this case, Alfa Laval has dispatched a VO model to handle the CPO Washing duties. For heavier oil flow capacity such as those in refinery however, would require the PX range of separators.



The Alfa Laval CPO Washing method has significantly brought down 3-MCPDE level in feed oil to achieve an average of 0.328ppm in product oil, as shown in graph above presented by Sime Darby R&D team.



No	Parameters	Sampling Point	Target	Achievement
1	% Oil Loss to OER	B	0.08	0.03
2	% Dirt in CPO	A	0.02	0.006
3	% VM in CPO	A	0.50	0.48
4	% Total Chlorine Removal	A	40	66.92
5	% 3-MCPDE Reduction	A	-	90.02

Above chart shows favourable results achieved according to initial parameters set by the Sime Darby R&D team.

In the last two years, Alfa Laval has been actively working with various palm oil producers on the mitigation of 3-MCPDE and GE, always emphasizing on cost-efficiency and sustainability. If you'd like to know how Alfa Laval can help you optimize your plant's processes, please contact Alfa Laval at sharmayne.cheng@alfalaval.com.

Alfa Laval will be exhibiting at PALMEX Indonesia, Medan from 9 – 11 Oct 2018, and IPOC Bali from 1 – 2 Nov. Catch Alfa Laval palm oil experts and talk about anything palm oil-related.

Alfa Laval's palm oil supply chain takes care of your processing needs – from milling and refining to fats modification, from by-products and related processes to end-products. The company also has strong service presence across the region to continuously help you optimize your performance and keep your operations online.

ALFA LAVAL SEPARATOR RANGE CATERS TO BOTH MILL AND REFINERY

Alfa Laval Separators	VO Range	PX Range
Suitable for	Mills & Small Refineries	Large Refineries
Application	Degumming, Neutralization, Washing	
Feed Type	Top feed inlet, a self-cleaning separator	Bottom feed inlet ensures gentle, non-destructive acceleration of the feedstock
Centrizoom™ Adjustable Paring Disc	This patented innovation is called Centrizoom™ and makes it possible to adjust the position of the separation interface during operation, facilitating optimal separation	
Models	Various models available to cater to different capacities	