

Closing the waste loop of palm oil industry in 24 hours



Fertiliser Output

Waste to Wealth Technology

With Biomax system, it takes only 24 hours to turn palm oil milling wastes into nutrient-rich, pathogen-free organic fertilizer with consistent quality.

The technology, developed by the Singapore-based Biomax Technologies, is able to treat palm oil milling wastes such as Empty Fruit Bunch (EFB), fruit fibres, decanter cake, Palm Oil Milling Effluent (POME) sludge, biogas sludge, boiler ash, etc into organic fertilizer. What is unique about this technology is that this conversion of waste to fertilizer can be done in 24 hours - which we have not heard in the industry before.

Typically, palm oil wastes are still treated the old-fashioned way. For example, EFB is solved by mulching at plantation which actually has disadvantages such as nutrients locking, long decomposition time, bulkiness, and also creating a habitat for rhino beetles. Most of the time, the amount of EFB is too enormous that it is burnt in open field or dumped away, creating additional pollutions and environmental critics about the sustainability of palm oil industry.

Waste to Wealth Technology

With the “waste to wealth” technology from Biomax, the different organic solid wastes from the palm oil mill can be mixed to a certain proportion depending on the palm oil mill operation situation. The wastes are treated inside a digester which is semi-automated with computer system.

The enclosed digester makes sure that the smell does not leak out during the process and air blowers will supply the atmospheric air into the digester. During the process, wastes are heated at high temperature of 80°C and enzymes break down the complex compounds from the waste to simpler compounds. If there is one thing to point out behind the accelerated process, it would be the unique mix of enzymes which was developed by Biomax’s R&D team.

Designed to be clean and compact, the system requires minimal space and does not generate any exhaust or other by-products throughout the entire process. It is easy to be integrated with palm oil milling operation, and depending on the scale of the production, it can be scaled up by adding in more modules.

High grade organic fertilizer

The end product is an organic fertilizer that comes out in odourless powder form. Due to the high temperature process, all the harmful pathogens are killed. Moreover, since the process takes place in an enclosed digester within 24 hours, all the nutrients are locked inside the fertilizer, achieving high nutrient value and organic matter. This organic fertilizer can be applied directly back to the oil palm plantations.

One of the main benefits of the organic fertilizer is that it promotes the growth of beneficial soil microbes. This will solve bad soil problems such as hardening and acidity. Usually, the plantation soil degrades due to over application of chemical fertilizers and by using organic fertilizer to complement with chemical fertilizers, plantation owners may overcome the soil problem.

By incorporating Biomax organic fertilizer into the fertilizer program of oil palm plantation, a plantation may achieve savings on fertilizer input costs, increasing the crop yield, and better soil condition for long term sustainable farming.

Other applications

There are also other applications of Biomax technology apart from the oil palm industry simply because this technology is applicable to any organic wastes.

Industrial players such as agricultural and livestock companies, slaughtering houses, food processing companies, municipalities and waste management companies would be highly relevant to such technology. Treatment of biogas sludge is also a target sector that the company has ventured into lately. The low grade sludge from biogas operations can be treated with the system to produce high grade fertilizer. Currently, Biomax has been actively expanding its global outreach with a record of installations in more than 11 countries around the world.

Closing the waste loop

Oil palm plantations have been expanding so much especially in Malaysia and Indonesia that the industrial players are pressed for responsible agricultural practices. Since the production has increased, disposing wastes has become more problematic as there are risks of environmental pollution, biomass nutrient wastage and greenhouse gas release.

As a result, waste managers and operators have to source for technologies that would be appropriate and most beneficial for their business. This technology handles waste in an environmentally-responsible way by closing the loop of waste stream, hence making it a sustainable solution for any agribusinesses.

