

Biomax, an innovative company based in Singapore, is at the forefront of an astonishing new technology that could revolutionise agriculture in the Middle East. The CEO of Biomax, Mr Sim Eng Tong, explained their unique technology to TME.

Could greening the desert become a reality?



The digester, which works at 80°C to break down organic waste into fertilizer, is an integral part of Biomax process

TME: Your Biomax technology, in the form of the BM1 enzyme, addresses two major global issues: global warming and food security. How did the concept come about and how does it work?

Mr Sim Eng Tong: Working in the food industry, I saw a lot of food thrown away and wanted to come up with a unique solution, which turned out to be a method of converting waste into organic fertilizer. Working with Dr Puah Chum Mok and a team of scientists, we developed the BM1 enzyme, which works in conjunction with a digester at 80°C to break down organic waste into fertilizer. Its unique selling point is that it is very fast - it converts in just 24 hours - and produces a high quality organic fertilizer.

TME: Your company only began commercial operations in 2009. What do you consider to be your most outstanding achievements?

Within a very short time, we have already managed to penetrate 13 countries, including Australia, France and Turkey. We are very proud to be reducing the carbon footprint with our technology as well as closing a loop in food security, as waste is effectively transformed into an asset.

The organic fertilizer also has added advantages over chemical fertilizers, reducing environmental pollution.

TME: How do you envisage the Middle East region benefiting from your technology?

We feel that we have two things in particular to offer the Middle East: one is to reduce the decomposition time of food waste in hot climates and convert it into something useful but very excitingly, we can transform desert into arable land. We have done a lot of research and one of the properties of the fertilizer is its high capacity to hold nutrients and water, which mixed with desert land, can, within one to two months, transform the sandy soil into soil that can grow crops.

TME: You talk about helping the agricultural sector to recycle its own waste, but presumably other sectors can benefit from it?

Yes we have specifically been working with livestock producers, food processing factories, but it can also be applied to general food waste from municipalities. We have even worked on a project involving human waste in Africa. The technology can be applied to different sectors as we have several digester sizes, starting with the small one with a conversion capacity of 15 tonnes of waste per day, which only occupies a space of 40sqm up to large industrial scale ones with a capacity of 50 tonnes of waste a day, all operate within the 24 hour timescale.

TME: Your enzyme works in 24 hours, which is obviously a very strong feature; what do you consider to be its other unique selling points (USPs)?

The speed of the operation is vitally important, but what is also unique is the high quality of our fertilizer; our enzyme breaks down complex molecules into simpler compounds that are more easily taken by the crops; you cannot use waste directly on crops, as this would be unsafe due to danger of pathogen outbreak so we feel we really do create something that is extremely beneficial to the environment, is eco-friendly and addresses food security concerns.

TME: Do you have any other concepts you are currently working on?

Our flagship technology is enzyme based, but we are looking at ways to make the cycle of conversion even shorter, as well as investigating areas we currently find challenging, including cellulose and lignin based products such as rice straw, wheat straw and, olive waste which are very difficult to break down. We are working on a project to develop a "softening enzyme" to speed up the process further. The company is R&D led and we feel waste has great potential to be converted into wealth around the world. ■

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