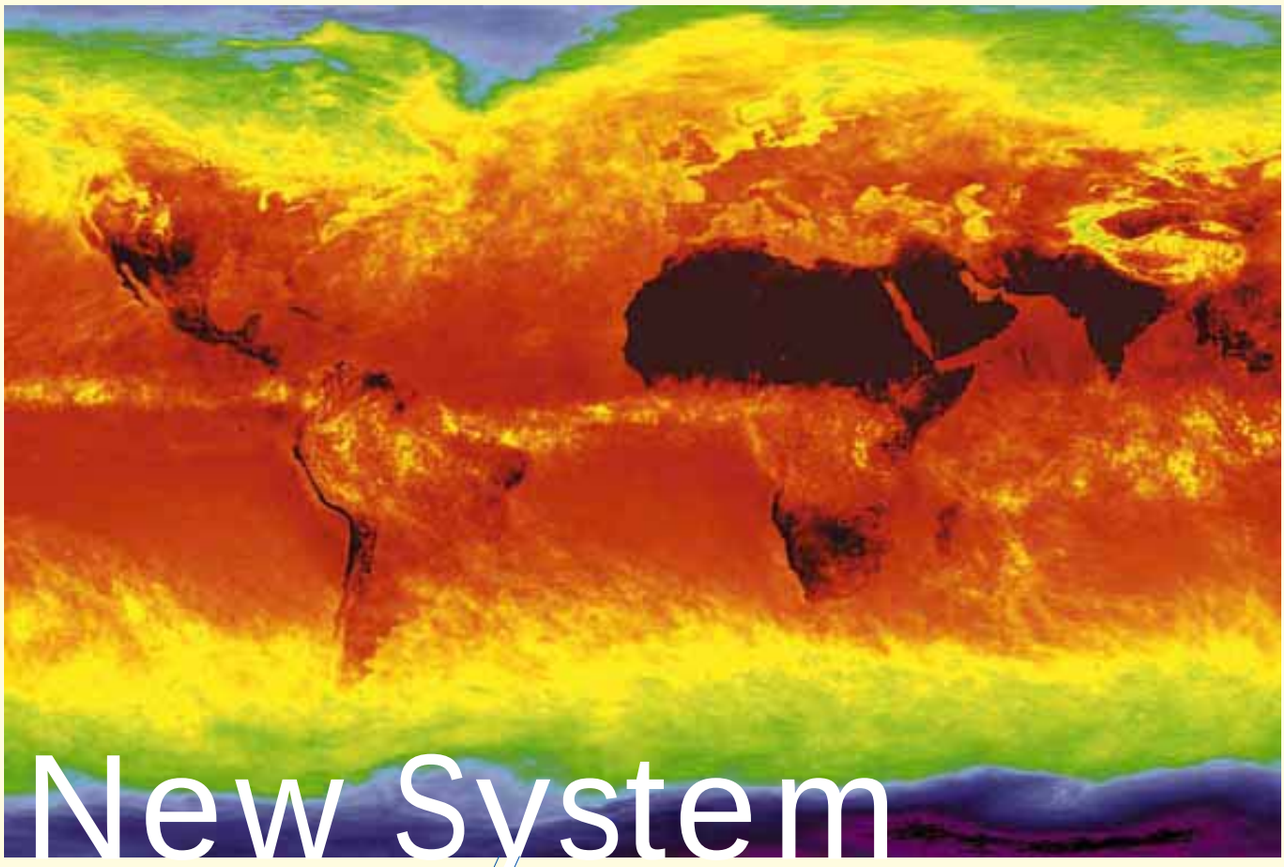

New System to Beat the Heat

The use of green technology to compost oil palm waste could reduce greenhouse gases that cause global warming

The unprecedented rise in temperature, unusual animal behaviour, and increased severity and occurrence of flooding are all worrying signs of climate change. It is caused by massive release of greenhouse gases (GHG) worldwide, resulting in imbalance in heat and carbon cycles.

On Dec 11, 1997, the United Nations-led Kyoto Protocol – a framework on climate change – came into being. The treaty seeks action by industrialised countries to reduce six key GHG (CO2, CH4) from 2010.

However, it will only come into force when ratified by countries responsible for 55% of rich nations' GHG emissions. This now stands at 44% and Russia's 17% will tip the balance. In November, the lower and upper houses of the Russian parliament endorsed the agreement, now awaiting Prime Minister Vladimir Putin's signature.

It is envisaged that the Protocol will be enforced by early 2005 despite the refusal of the US to be a signatory, when it is the world's worst polluter in relation to GHG emission.

Malaysia signed the Protocol in 1999 and ratified it in 2002, even though it is classified as a non-Annex 1 member. Since then, the government has put in place policies to minimise GHG emission.

Members in non-Annex 1 category do not have to pursue limitation or reduction of emission of GHG individually or jointly with a view of reducing their overall emissions by at least 5% below 1990 level, as polluting nations have to.

Photo: United Plantations

Chipping to enhance decomposing of oil palm in zero burning technique of replanting

New composting system

The pro-active engagement is similarly reflected in Malaysia's palm oil industry, which has instituted Good Agricultural Practices such as the zero-burn technique as a standard method in replanting oil palm. Other producer countries are now adopting this method, which eliminates gaseous and particulate emissions during the burning of biomass.

Other practices such as leguminous creeping covers, terrace preparation for soil conservation, non-tillage approach during planting and replanting, and integrated pest management augur well for the environment and sustainability of palm oil production.

Green technology, developed by Malaysian company Asia Green Environmental Sdn Bhd, is solving the problem of biogas (comprising 1/3 CO2 and 2/3 CH4) emission from the existing palm oil mill effluent ponding treatment system.

The cost effective mill integrated waste management solution (MIWAMAS) composting system converts liquid palm oil mill effluent and solid waste (empty fruit bunches) into a valuable organic fertiliser. This reduces the need for a ponding system and thus the generation of methane under anaerobic conditions.

It is estimated that a 30 tonne/hour palm oil mill processing an annual throughput of 150,000 tonnes of fresh fruit bunches could generate 1.5 million cubic metres of methane from the conventional ponding system. There are 385 mills in Malaysia and many more in other countries.

MIWAMAS helps reduce GHG (in the form of biogas) and eliminates the discharge of treated waste water into water courses. It captures the nutrient value from both solid and liquid wastes, reducing the bulk of the former and driving off the moisture in the latter via the natural process of aerobic decomposition. The system may eventually become an integral part of any palm oil mill.

Under the Kyoto Protocol there is a provision for industrialised countries to fulfill their commitment of GHG reduction by buying carbon credit in developing and underdeveloped countries through the Clean Development Mechanism (CDM) projects.

The MIWAMAS system would qualify as a CDM project that the Malaysian government could certify, thus providing monetary incentive for faster adoption by palm oil millers.

This positive contribution by the industry will further add to the area of carbon sequestration, a vital component in the equation of global warming.

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Deer are excellent natural weeders

Barn owls help control the rodent population in estates