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Mission: Biodegradable plastic from waste

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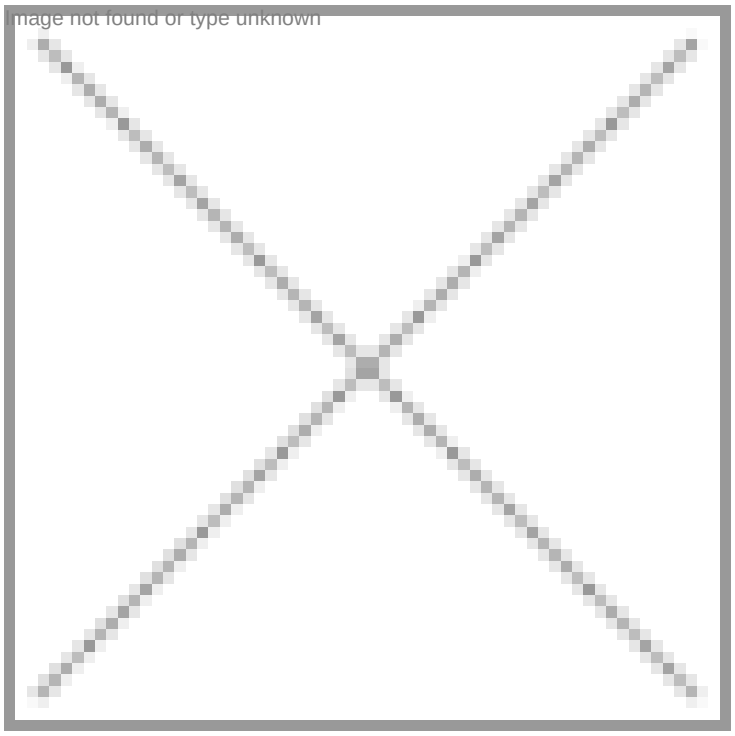

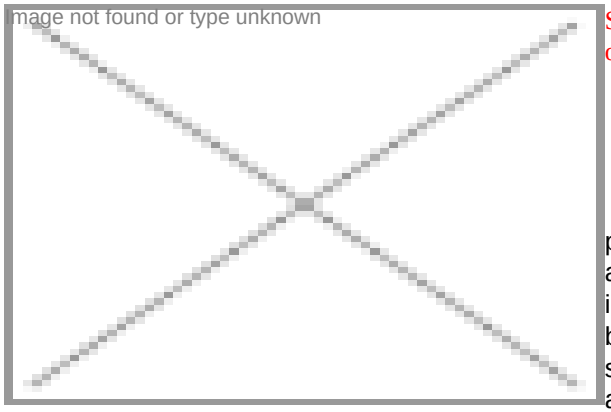

SPC Biotech, after finding support from the DBT, has validated its technology on bio conversion of agricultural waste from mango kernel into bio-plastic on a

Non-degradable plastic waste has been a major source of concern for authorities as well as the common masses. Hyderabad-based SPC Biotech for the last five-to-six years has been doing research on bio-products, especially bio-polymers and bio-chemicals to find an alternative. IndoPLA, SPC Biotech's biodgradable polymer, can be used in all conventional conversion processes such as injection molding, blow bolding, thermo forming and extrusion. The first plant of the company started its commercial operations in 2004-05. However, concerns such as the three-to-four times costlier prices as compared to the conventional petroleum-based plastic and the use of food source as the source of raw material were plaguing the firm.

After initial study, the R&D team at SPC Biotech found a unique way to tackle the problem. They started working on agriwaste which is not fit for human consumption as basic raw material to produce bioplastics. The result was the development of a process that does bioconversion of mango kernel into polylactic acid (PLA), a biodegradable polyester, and finally created bioplastic material.

The company after developing the technology for the conversion of agriwaste into bioplastics at laboratory-scale and bench-scale approached the Department of Biotechnology (DBT), Ministry of Science and Technology under the Biotechnology Industry Partnership Programme (BIPP), for commercialising the same.

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The technical expert committee recommended that technology has to be demonstrated at pilot scale and the DBT supported the same. Out of the total project cost of 100 lakh, the DBT provided funding to the tune of 50 lakh and the rest was managed by the company. The BIPP support proved to be useful for the company as it is difficult to get financial support for validating technology at pilot scale. Mr M S Shankara Prasad, managing director, SPC Biotech, while appreciating the BIPP support, says, â€œThanks to the BIPP, many industries with good technologies are able to introduce their products in the market. It is difficult to get the support from regular commercial financial institutions, where they look for so many things.â€?

The way forward

The advantage of the green plastic is that it ultimately decomposes to water and carbon dioxide by the action of microorganisms in a natural environment. Therefore its availability at a lower price will surely help in controlling the environmental damage caused by the non degradable plastic material to a huge extent. Given the fact that the estimated plastic consumption in India is close to 30 million ton, even if five percent of this is replaced with polylactic acid-based biodegradable plastic, the requirement would be around 1.5 million ton per year. Thus, it can create more employment opportunities for people in rural areas. SPC Biotech has finished the validation of the technology on a pilot scale. Now it is in the process of commercializing it with an installed capacity of 1,000 metric ton. In the next six months, these products are expected to be available for commercial applications in a natural environment, especially in areas where recycling is difficult.

Rahul Koul in New Delhi