

Bangalore Mirror

TEMPERATURE MAX 30 | MIN 22 | HUMIDITY 59%

FORECAST GENERALLY CLOUDY SKY WITH ONE OR TWO SPELLS OF RAIN/THUNDERSHOWERS WITH MODERATE WINDS | SUNRISE 06:02 HRS | SUNSET 18:50 HRS

City scientists eye deadly weed to put India in the lead

Scientists from IWST want to popularise indigenous production of cost-effective, eco-friendly and durable wood polymer composites by using invasive weed *Lantana camara*

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Scientists from the Bengaluru-based Institute of Wood Science & Technology (IWST) have an idea that can kill not two, but three birds with one stone. They want to rid India's forests and national parks of an extremely invasive, fast-spreading and poisonous weed, called *Lantana camara*, by using it in making wood polymer composites (WPC) for a cost-effective and eco-friendly range of applications – from construction to household items like foot mats and pen cases. In the process, they will trap carbon in the composites and prevent it from escaping into the atmosphere – which would be the case if the weed is burnt or thrown as waste.

The IWST scientists considered the dangerous weed to be part of their idea as it would not only significantly eliminate it from the forests but would also help give India the push in WPC production. The scientists said that as the weed grows prolifically in India, there is absolutely no cost or problem involved in growing it or availing it to make WPC.

India has been pathetically lagging in WPC production, the leader being China with 18 lakh tonnes in 2015 compared to India's 70,000. But even that low tonnage that India produces is not indigenous. The 21 existing Indian manufacturers of WPC products purchase not only the knowhow, but also the basic materials, from China, USA, European countries or Japan – the leaders in the WPC global market, which is projected to touch \$ 4,601.7 million by 2019.

Now, aiming to popularise the WPC technology in India to encourage indigenous manufacture of WPC products, the IWST is planning to set up a WPC research and training centre on



LANTANA CAMARA

Lantana camara is known to be an extremely dangerous and poisonous weed, the raw berries of which are known to be very toxic, causing harm to livestock grazing in the wild. The weed – endemic to Pacific Rim countries – invades and disrupts native Indian plant communities. It is found all across forests and national parks in India, although no one is sure how it came into the country.



WHAT IS WOOD POLYMER COMPOSITE

WPC is a hybrid material produced from natural wood and plastic fibre. Natural material, that could comprise sawdust, peanut hulls, bamboo or weeds, are mixed with new or waste plastic which is powdered. The production of WPC uses wood waste mixed with various plastics and the powder is extruded to a dough-like consistency before giving it the required shape and hardened under pressure. WPCs are gaining popularity as safe,

environmentally sustainable and long-lasting products.

According to the January 2016 edition of the *Journal of Cleaner Production*, by using biodegradable polymers, a fully biodegradable composite can be formed. In addition to using recycled materials and potentially being biodegradable, WPC also offers the possibility of being recycled itself, therefore being considered as a "green composite".

its campus in Malleswaram (next to Aranya Bhavan) at a cost of just Rs 5.40 crore with no additional infrastructure or expertise, which IWST is already equipped with.

"So, in one go, we are trying to achieve the conditions of 'Make in India' as well as 'Swachh Bharat Abhiyan' as toilets in rural areas can be quickly assembled onsite using WPC that is indigenously manufactured," said Surendra Kumar, director of

IWST, which has mastered the process for producing natural fibre-filled WPC through a technology that aims at reducing consumption of plastics (polymers) and efficiently utilising plant dry matter like saw dust, branches, agricultural residues and forest weeds – including the dangerous *Lantana camara* – to make plastic products more environment-friendly.

The IWST scientists, as part of developing WPC products, are

targeting *Lantana camara* and are working with the forest departments of Karnataka, Tamil Nadu and Punjab.

The idea to set up the WPC research and training centre already has the support of the Indian Council of Forestry Research & Education, under the aegis of which IWST functions. The scientists now plan to approach the ministry of environment & forests for the funding.

Senior IWST scientists Pankaj

Aggarwal and Shakti Singh Chauhan, who will play a lead role in training the industry and popularising the technology, said apart from the weed, they are exploring various other fibres for the composite.

With Karnataka forest department, IWST is exploring making the composites using areca nut, coconut and coir fibres, while with Tamil Nadu the institute is exploring another weed, *Prosopis juliflora*.