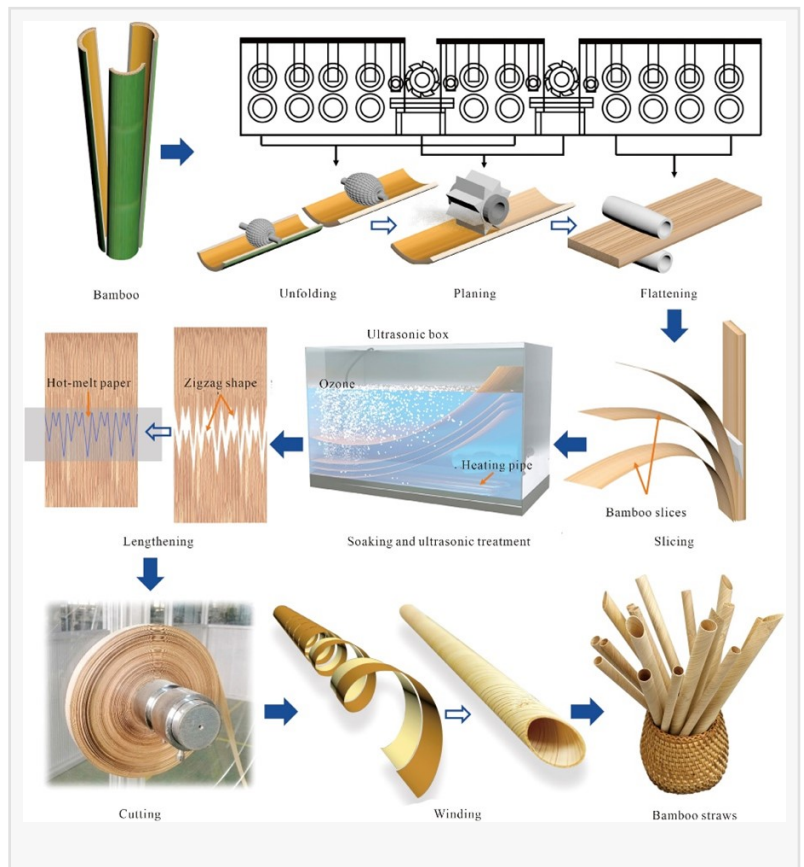


Eco-friendly Bamboo Drinking Straws: A Sustainable Alternative to Plastic Pollution

Innovative Solution from Bamboo's Flexibility and Toughness

NANJING, CHINA, April 1, 2025 /EINPresswire.com/ -- The global issue of plastic pollution has led to a search for sustainable alternatives to disposable plastic products. One of the most problematic items is the plastic straw, which is lightweight, non-degradable, and often ends up in oceans and landfills. Traditional alternatives like paper and polylactic acid (PLA) straws have their own drawbacks, such as poor durability and high production costs. Now, researchers from the International Centre for Bamboo and Rattan (ICBR) in China have developed a biodegradable bamboo drinking straw that addresses these challenges.



The study, led by Yu Luan and colleagues, introduces a method for producing bamboo straws by winding ultra-thin bamboo slices. These slices are prepared from 3-year-old Moso bamboo and undergo a special soaking and ultrasonic treatment to enhance their properties. The resulting bamboo straws exhibit high tensile strength, exceptional flexibility, and the ability to withstand repeated torsion without breaking. The mechanical properties of the bamboo straws were tested and compared to those of commercial paper, PLA, and polypropylene (PP) straws. The bamboo straws demonstrated compressive strength of 16.42–19.01 MPa and bending strength of 14.21–15.02 MPa, surpassing the performance of paper and PLA straws.

Moreover, the bamboo straws maintained their structural integrity when exposed to various beverages, including hot water, carbonated drinks, and alcoholic beverages. They absorbed significantly less water than paper straws and retained 4.36 times greater wet strength. The production cost of bamboo straws is also remarkably low, estimated at approximately 0.014

yuan (US dollar) per straw, making them a cost-effective alternative to existing biodegradable options.

Consumer surveys conducted at beverage shops revealed high satisfaction rates with the bamboo straws, with over 90% of respondents expressing approval. The study concludes that bamboo drinking straws offer a sustainable and practical solution to plastic pollution, with the potential to replace traditional plastic straws on a large scale.

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