ENDOPISO: Reusing Cocus nucifera Endocarp Wood to Produce Alternative Floors

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In Brazil, the consumption of coconut products (Cocos Nucifera) has grown substantially in recent years. This contributed significantly to the intensification of fruit production and cultivation and to the increase of solid waste in landfills and public roads. Our goal was to develop an alternative floor through the reuse of coconut-woody endocarp, based on social, environmental and economic aspects. We divided the methodology in four stages. In the first stage, we diagnosed the problem and carried out a bibliographic survey. Then developed an eco-sustainable and low-cost floor as a proposed solution. The second stage, we collected coconuts in dumps, and then selected fruits in better conservation states. After that, we extracted the woody endocarp from the coconut fibers and sequentially powdered it using an electric motor operated forage chopper. Subsequently, the endocarp powder was added to a resin mixture with catalyst, transforming it into a pasty residue, which was placed for spontaneous drying in a template of dimensions 20 cm by 40 cm. After 24 hours, the material produced was de-shaped and was subsequently analyzed. Endopiso plates were submitted to flexural strength tests, taking as a parameter the local standard NBR 13.818 / 1997. In this process, we verified that the maximum flexural tension of the Endopiso is of approximately 72.1 Mpa - superior to those attributed to other type of floors available in the Brazilian market. Finally, Endopiso was applied in a residence located in an area of social vulnerability. The Endopiso eliminated clay removal from the soil, had high flexural strength, reduced waste of coconut woody endocarp and proved to be a high applicable material in floor and coating, both in external and internal areas.

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