



Fertilizer rich in carbon and nutrients

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> **Description** A new process has been developed to produce a material rich in carbon and nutrients from sugarcane vinasse and bagasse by means of hydrothermal carbonization. This material is applicable mainly as an organomineral fertilizer, since it provides the nutrients needed for soil.

> **Problem** Brazil is the world's largest producer of sugar and second largest producer of fuel ethanol from sugarcane, generating millions of tons of wastes in the form of sugarcane vinasse and bagasse each year. Moreover, the constant increase in sugar and fuel ethanol production makes it imperative to find alternatives for the reuse of these wastes.

> **Benefits** The proposed technology consists of a process to produce a material rich in carbon and nutrients, which can be used as an organomineral fertilizer. Given that it is obtained via the hydrothermal carbonization of vinasse and bagasse, this product has a high water retention capacity, contributing to render it more effective than other fertilizers currently available on the market. In addition, this technology offers a suitable alternative for the reuse of vinasse and bagasse, which are sugarcane wastes, adding value to them and closing the industry's production cycle.