

## ABSTRACT

Conventional detergent waste, which contains phosphates and surfactants that are difficult to decompose, is one of the main causes of environmental pollution. In addition, the widely used PVA-based laundry pods are also not fully biodegradable. This research focuses on the development of laundry bomb, a solid detergent inspired by the mechanism of bath bombs, using natural ingredients such as water hyacinth, rubber cassava leaves, and rice straw as a more environmentally friendly alternative. Water hyacinth (*Eichhornia crassipes*) contains antioxidant compounds such as alkaloids, tannins, and saponins that also support the cleaning process, rubber cassava leaves (*Manihot glaziovii*) were chosen for their flavonoids, saponins, and tannins that function as antibacterial and natural cleaners. Meanwhile, rice straw (*Oryza sativa*) is known to contain flavonoids and phenolic compounds that have antioxidant and antibacterial properties. This study aims to test the effectiveness of laundry bomb in removing stains as well as test the effectiveness of the bath bomb mechanism adopted in it. Hopefully, this product can be an innovative solution that is more environmentally friendly in the cleaning industry.

**Keywords:** laundry bomb, natural detergent, water hyacinth, rubber cassava leaf, rice straw.