

## **Banana biomass waste: A prospective nanocellulose source and its potential application in food industry – A review**

### **ABSTRACT**

Bananas are among the most produced and consumed fruit all over the world. However, a vast amount of banana biomass is generated because banana trees bear fruit only once in their lifetime. This massive amount of biomass waste is either disposed of in agricultural fields, combusted, or dumped at plantations, thus posing environmental concerns. Nanocellulose (NC) extraction from this source can be one approach to improve the value of banana biomass. Owing to its superb properties, such as high surface area and aspect ratio, good tensile strength, and high thermal stability, this has facilitated nanocellulose application in the food industry either as a functional ingredient, an additive or in food packaging. In this review, two different applications of banana biomass NC were identified: (i) food packaging and (ii) food stabilizers. Relevant publications were reviewed, focusing on the nanocellulose extraction from several banana biomass applications as food additives, as well as on the safety and regulatory aspects. Ultimately, further research is required to prompt a perspicuous conclusion about banana biomass NC safety, its potential hazards in food applications, as well as its validated standards for future commercialization.