

## A COMPREHENSIVE REVIEW ON SUSTAINABLE ECO-FRIENDLY PLANT EXTRACT-FUSED BIODEGRADABLE FILM

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*The advancement of Sodium Alginate (SA) based films incorporating plant extracts reduces food waste by enriching antimicrobial and antioxidant properties. Using renewable, biocompatible resources, promoting sustainable development, and lowering environmental pollution from non-degradable plastics help to create a circular economy. The use of appropriate packaging significantly contributes to improving food stability and shelf life. Polypropylene and polyethylene are conventional synthetic packaging materials with higher mechanical strength and barrier properties, but they pose significant environmental challenges due to their resistance to degradation and concerns about pollution. Here, we emphasise the properties of plant extract or natural compound fused SA-based films to extend the freshness of food materials. This review paper addresses a challenge associated with formulating composite films.*

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