



# Unveiling plants with food preservative properties

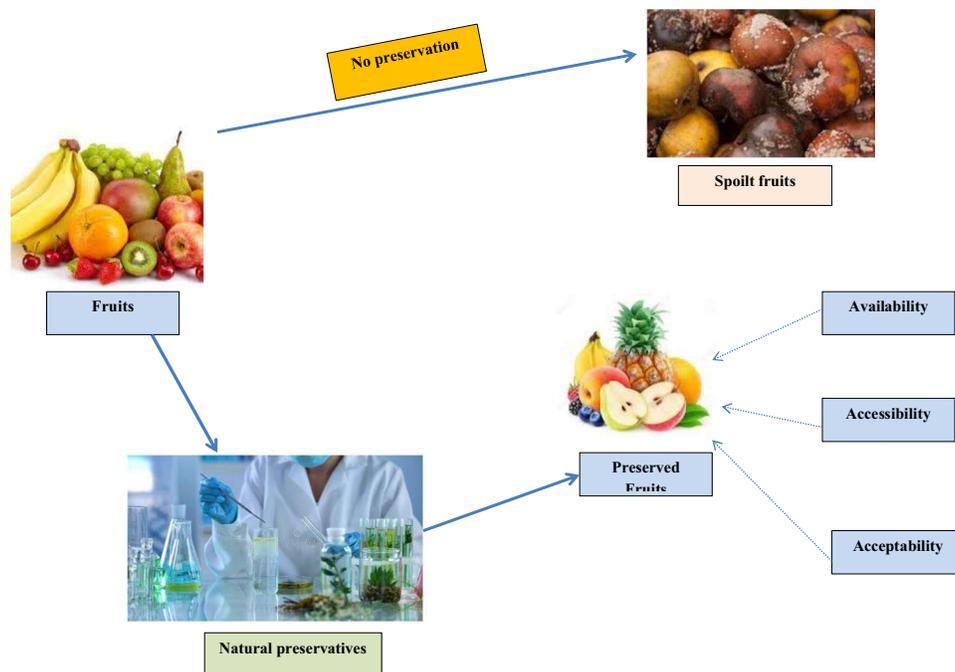
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Received: 25 December 2023 / Accepted: 1 July 2024  
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## Abstract

The ever-increasing demands coupled with the incessant microbial spoilage of food and food products have awakened the interest of researchers towards the search for safe and economical food preservatives. The high water content of most foods is believed to favour microbial growth, therefore causing economic loss, diseases and reduction in shelf life. In an attempt to develop eco-friendly plant-based food preservatives, a comprehensive study establishing the anti-food spoilage activity of plants was carried out. Globally, more than 5000 bioactive compounds with antioxidant and antimicrobial properties have been discovered in plants. Secondary metabolites such as essential oils, thiols and polyphenols could be responsible for the significant antioxidant and antimicrobial activities exhibited by plants. The food preservative capacity of plants could also be linked to the classes, nature and amount of these secondary metabolites in the plant. Despite the breakthrough in the use of plants as preservatives, quite a number of plant species remain unexplored. This study unveils the pathways used to investigate the food preservative properties of unexplored plants. The current status and challenges in using plant extract as a food preservative are also discussed.

## Graphical abstract



**Keywords** Food spoilage · Antimicrobials · Plant-based food preservatives · Antioxidants · Secondary metabolites

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