

**Title** Effects of drying methods and conditions on release characteristics of edible chitosan films enriched with Indian gooseberry extract

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### **Abstract**

The present work was aimed at studying the effects of drying methods and conditions (i.e., ambient drying, hot air drying at 40 °C, vacuum drying and low-pressure superheated steam drying within the temperature range of 70–90 °C at an absolute pressure of 10 kPa), as well as the concentration of Indian gooseberry extract, (added to edible chitosan film-forming solution as a natural antioxidant, at concentrations of 1, 2 and 3/100 g), on the residual total phenolic content (TPC) of the films. The swelling and release behaviour of TPC from the films were also studied. Drying methods and conditions were found to have significant effects on the percentage of residual TPC. The release characteristics, swelling and functional group interaction of the antioxidant films, as assessed by Fourier-transform infrared (FTIR) spectroscopy, were found to be affected by the drying methods and conditions, as well as the concentration of the Indian gooseberry extract.