

# Synergistic effect of *Aloe* gel (*Aloe vera* L.) and Lemon (*Citrus Limon* L.) peel extract edible coating on shelf life and quality of banana (*Musa* spp.)

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## Abstract

Short shelf-life of banana at ambient temperature is major concern in tropical regions because the temperature elevates the ripening related changes such as tissue softening, senescence, spotting on peel, off-odour and fungal disease mainly anthracnose. Here, this work is focused to evaluate the potential effect of *Aloe* gel (AG), lemon peel extract (LPE) and their combinations as edible coating treatment on postharvest quality and shelf-life of banana during storage at  $23 \pm 1$  °C. Effectiveness of coating on banana was assessed by performing variety of physiochemical parameters namely weight loss, decay, disease severity, pH, acidity, soluble solids, sugars and ascorbic acid. Moreover, the antifungal efficacy of lemon peel extract was examined on the most disastrous fungus *Colletotrichum musae* causing anthracnose in banana. The treated fruits showed reduction in the rate of weight loss and decay of the fruits during storage. The breakdown of organic acids and accumulation of soluble solids were slower in bananas protected with edible coatings. Furthermore, the amount of ascorbic acid in banana was maintained in AG (50%) + LPE (15%) coated fruits during storage. Besides, the application of edible coating extends the banana shelf life up to 9 days with no disease incident. Thus, it indicates that the *Aloe* gel (AG) and lemon peel extract (LPE) constituted edible coating is an effective alternative to extend the shelf life and reduce the quality losses in banana rather than the use of hazardous fungicides and chemical preservatives.