

Secondary product from strawberry (*Fragaria ananassa*) fruit for extended preservation and value addition

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Abstract

Strawberry is highly delicate and perishable fruit prone to microbial spoilage. To address these issues, secondary product(s) using strawberry pulp was prepared by adding sweetener (jaggery or sucrose) and anti-browning agent (citrate) to reduce the extent of drying induced sourness and discoloration, respectively. Subsequently, these products were LDPE packed and radiation processed (≤ 5 kGy) to ensure microbiological safety during ambient temperature storage. Physical, biochemical, functional (antioxidant and antimutagenic) and organoleptic properties (including flavor compounds) were found to be either retained or enhanced compared to dehydrated strawberry pulp. The product termed as dehydrated strawberry roll having jaggery and citrate (DSRJ) was found to be more acceptable than that having sucrose and citrate (DSRS) till 5 months. Scanning electron microscopy indicated better surface quality of DSRJ than DSRS. Electrochemical property when analyzed using cyclic voltammetry displayed strong correlation to radical scavenging antioxidant assays with marginal storage associated shift in the peak potential. GC–MS analysis indicated retention of most of the flavor compounds in DSRJ during storage. Thus, DSRJ, a value-added product could provide a solution to control post-harvest losses of the fruit by processing to a more stable form and ensuring availability beyond the season.