

Kinetic retention of sialic acid and antioxidants in Malaysian edible bird's nest during low-temperature drying

ABSTRACT

Drying is one of the essential processing steps for dried edible bird's nest; however, sialic acid and antioxidant can be highly thermosensitive and unstable. Therefore, aim of this study was to determine the degradation kinetics of sialic acid and antioxidants during low-temperature drying at 25-40°C as compared to conventional hot air-drying at 70°C. These compounds' degradation exhibited first-order kinetics. Sialic acid and antioxidant retentions were 83.9 and 96.6%, respectively, at 25°C, and 78.7 and 91.5% at 40°C, respectively, by low-temperature drying; while, 42.5 and 38.7%, respectively, at 70°C by conventional hot air-drying. Finally, empirical models were significantly fitted to predict sialic acid and antioxidant retention as edible bird's nest reached a certain level of drying, which may be useful from the processing standpoint and validate the usage of low-temperature drying as a process tool for retention of sialic acid and antioxidant in edible bird's nest.

Keyword: Antioxidant; Edible bird's nest; Kinetic degradation; Low-temperature drying; Sialic acid