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Mechanical properties and stress relaxation characteristics of fresh and partially fermented coffee parchment

M. SIDDHARTH AND A. KARTHIAYANI

The important commercial species of Coffee grown in India are arabica coffee (*Coffea arabica*), robusta coffee (*Coffea canephora*) and tree coffee (*Coffea liberica*). Arabica coffee is cultivated largely in the world since it produces the best quality coffee. Frictional properties of fresh and partially fermented arabica coffee parchment of Cauvery variety are important in development of washer mechanism for parchment at estate level processing of coffee. Mechanical behaviour of coffee parchment being time dependent must logically be studied by applying the principles of rheology and visco-elasticity. The stress relaxation function describes the behaviour of visco-elastic materials of coffee parchment. Hence stress relaxation behaviour of fresh and partially fermented arabica coffee parchment were studied. The result indicated that the stress decay last for 400, 1890, 1560 and 1740 seconds for fresh, 16, 20 and 24 hours fermented parchment, respectively. The stress relaxation behaviour indicated that the parchment have the tendency to break easily and hence care should be taken while handling / during washing of parchment.

Key Words : Arabica coffee parchment, Frictional properties, Stress relaxation behaviour

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Author for correspondence :
M. SIDDARTH, College of Food and Dairy Technology, Koduvalli, CHENNAI (T.N.) INDIA
Email: siddharth_chennai@yahoo.co.in

Associate Authors' :
A. KARTHIAYANI, College of Food and Dairy Technology, Koduvalli, CHENNAI (T.N.) INDIA