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Physico-Chemical Characteristics of Terminalia arjuna Encapsulated Dairy Drink

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Abstract : Terminalia arjuna (TA), an important medicinal plant in Indian System of Medicine, is specifically recognized for its recuperative effect on heart ailments. Alcoholic extract of TA (both free and encapsulated) was incorporated into milk to obtain functional dairy beverages. The respective beverages were appropriately flavored and optimized using response surface methodology to improve the sensory appeal. The beverages were evaluated for their compositional, anti-oxidative and various other physico-chemical aspects. Addition of herb (0.3%) extract to flavoured dairy drink (Drink 1) resulted in significantly lowered ($p>0.05$) HMF content and increased antioxidant activity, total phenol content as compared with control (Control 1). Subsequently, a significant ($p>0.05$) increase in acidity and sedimentation was also observed. Encapsulated herb (1.8%) incorporated drink (Drink 2) had significantly ($P>0.05$) enhanced HMF value and decreased antioxidant activity, phenol content as compared to herb added vanilla chocolate dairy drink (Drink 1). It can be concluded that addition of encapsulated TA extract and non-encapsulated TA extract to chocolate dairy drink at 0.3% concentration altered the functional properties vanilla chocolate dairy drink which could be related to the interaction of herb components such as polyphenol with milk protein or maltodextrin/ gum Arabic matrix.

Keywords : Terminalia arjuna, encapsulate, antioxidant activity, physicochemical study
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