DAIRY BEVERAGE WITH GREEN TEA EXTRACT: THE ROLE AS FUNCTIONAL FOOD AND PROVIDING PROTECTION AGAINST LIPID OXIDATION

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Natural antioxidants have been extensively studied due their widely application in food industry and also their healthy benefits. The addition of polyphenols from green tea extract (GTE) at 0, 0.0010, 0.010 and 0.10% to dairy beverage (2% linseed oil) formulation was investigated. Polyphenol content, DPPH\textsuperscript{*} and ORAC assay were used for characterization of antioxidant capacity. Major catechins were identified and quantified by HPLC. Samples control and containing GTE were submitted to a storage study at 50°C in the dark or under light at 4°C, and also to thermal processes at 63.5 °C for 30 min or at 110°C for 10 min. Dairy beverages containing GTE showed a marked antioxidant capacity in all the assays evaluated. Storage conditions had an effect (P<0.05) on catechin content, rather for heat than for light exposition. The GTE at 0.10% decreased global color changes, and aldehydes formation upon thermal processes. GTE exhibit a degree of lipid protection in a dose-dependent manner. GTE at 0.10% was effective to prevent lipid oxidation during storage. Throughout heat storage testing green tea polyphenols reduced Maillard associated to color changes in dairy beverage, as well as after sterilization process. The use of these teas for stabilizing food products represents an alternative way of maintaining a high flavor quality without the use of conventional food preservatives.