

Catechins and Antioxidant Activity in Georgian and Foreign Tea

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Abstract. Tea is the favorite and most widely spread drink in the world with a five-thousand-year history. Tea is produced from the plant *Camelia sinensis* (L) O. Kuntze, as result of the technological processing, the most important taste properties and biological activity of which are determined by polyphenols, primarily catechins. Useful properties of tea for human health, to a greater extent determined by the presence of catechins, which ability antioxidant, anti-inflammatory, antimicrobial, antiviral, anticancer and anticoagulant activities. High therapeutic and prophylactic properties are also maintained by catechins conversion products - theaflavins and thearubigins. It is important for the consumer to know which types of tea and from which countries contain the highest amount of catechins. In addition, it is important to develop technology and create types of tea rich in catechins with high antioxidant activity. The beneficial properties of tea should be combined with good organoleptic characteristics of tea. Sensory scores should have satisfactory indicators of color, aroma, taste, and general acceptability.

Antioxidant activity of 12 different types and origins of experimental and commercial tea product extracts and the number of catechins using HPLC have been studied. "Shemokmedi" in commercial green Georgian tea has been established, high substitution of epigallocatechingalate, which is especially useful for health. Georgian green tea extracts have a higher substitution of epigallocatechin than foreign ones. High rates of experimental red tea have been shown to be based on the total number of phenols, antioxidant activity, and individual catechins, resulting in instantaneous and deep inactivation of oxidizing enzymes in the technological process of producing this type of product. The sensory evaluation results showed that ART had a satisfactory colour, aroma, taste, and overall acceptability scores. Our results highlight the potential usefulness of Institute fermented red tea as a nutraceutical food/ingredient with special functional activities.

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