EFFECT OF THE DRYING METHOD ON THEANINE AND CATECHINS CONTENT OF *CAMELLIA SINENSIS* (L.) O. KUNTZE LEAF

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Theanine and catechins are very important components in tea quality evaluation. Recently has been shown that regular tea drinking is benefit for health. These benefits are mostly due to the presence of theanine and polyphenols in the leaf (Horie and Kohata, 1998; Stagg and Millin, 1975).
No experimental evidence exist showing how different fresh leaf stabilization methods influences theanine. Moreover, completed studies about this subject related to catechins were not found by our team in the consulted bibliography.
In this work determination of theanine, epigalocatechin (EGC), epigalocatechin gallate (EG), epicatechin (EC), catechin (C) and caffeine were performed by Capillary Electrophoresis (CE) and/or High Performance Liquid Chromatography (HPLC) techniques (Bronze, 1998); *p*-nitrofenol was used as internal standard (I.S.) in compounds quantification. Sample collection of fresh tea leaves was performed in Parque da Pena, Sintra, from centenary China type plants, growing freely and untreated. This is the first chemical study of this Continental Portuguese material. We haven't any information about those plants more than its China provenience, so it was pertinent to characterized it. Samples (pekoe and the three youngest leafs of plants shoots, corresponding to an "average harvest") were divided in 3 lots, for different stabilisation: one of them was dried at 65ºC until constant weight was reached; other was blanched

with steam at 90ºC for 150 seconds and dried as the former; the third one was lyophilized.

Data showed theanine and catechins content of the samples were similar to China type tea plants, particularly those from Azores, as we concluded during a comparative study between Azorean China and Assam types (Marques, 2005 and Marques et al., 2005). Theanine content (determination by EC) varied according to the dryng method. The highest values were observed on samples treated with steam (54mg/g) while lyophilized ones presented the lowest content (29mg/g); dried samples content was 40mg/g. Catechins, quantified by EC, totalized *cc* 38, 71 and 187 mg/g, in dried, steamed-dried and lyophilized samples, respectively. HPLC results, based in catechin/IS areas ratios, showed similar profile. EGCg was the majority compound (26, 45 and 102mg/g). Lyophilized samples have the higher values for all individual catechins.

Results allow us to conclude that lyophilization is the ideal method for preserving catechins, whereas steam-drying and drying lets to higher values of theanine.

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