**Yerba mate as functional component: Elaboration of a whole wheat bread and the impact on antioxidant activity**

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Foods enriched with natural raw materials which contain specific bioactivity, are gaining greater consumer attention. The breads are a good alternative for adding natural sources of antioxidants, as the yerba mate leaves. However, the bakery process can alter the bioactivity of these compounds. The aim of this work was evaluate the effect of the particle sizes of yerba mate leaves on the phenolic content and antioxidant activity of flours and whole bread after baking. The leaves of yerba mate (*Ilex paraguariensis* St. Hil) in nature were bleached, dried and ground in two particle sizes: ≤ 245 (YMF) and ≤ 415.5 µm (YMM). The yerba mate was added in the amount of 2.5 g yerba-mate/100 g whole wheat flour (WWF), totaling two samples, besides the control (WWF). The breads were prepared from the small-scale baking. The phenolic content was determined using the Folin-Ciocalteau reagent, and the antioxidant activity for assay ABTS was determined, in both flours and breads. The phenolic content increased in the flours added with yerba mate in the two particle sizes, while the YMF and YMM breads, did not differ from each other, only with the WWF bread (p < 0.05). The temperature did not affect the phenolic content in breads. In relation the antioxidant activity of the flours, an increase was observed in the samples elaborated with fine and medium yerba mate leaves (YMF and YMM), compared to WFF (control). While for breads the results showed that YMM bread, after baking, presented higher antioxidant activity than others samples. This behavior can be explained by the contact surface of YMM, where, during the grinding of the leaves, a lower exposure of the compounds occurred, and consequently, a lower degradation during baking. Therefore, the elaboration of a bread with yerba mate is a promising alternative to incorporate natural sources of vegetables with bioactive action, and can bring several benefits to consumers, in addition to increasing the consumption of a regional product.

**Keywords**: *Ilex paraguariensis*, whole wheat flour, bioactive compounds, bakery products.

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