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HOW DO THE BREWING TIME AND TEMPERATURE AFFECT THE RADICAL SCAVENGING ACTIVITY OF CHAMOMILE BASKET INFUSION?

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Relevance. Chamomile baskets are a valued herbal raw material extracted from the *Matricaria chamomilla* L. Due to antispasmodic and anti-inflammatory effects, it is used for gastrointestinal complaints (mild cramps, flatulence and belching). In addition, chamomile basket is used as a topical anti-inflammatory agent in mild inflammation of the skin and mucous membranes. Substances identified in the raw material include terpenes (chamazulene, bisabolol and farnesene), flavonoids (apigenin, patuletin, quercetin and luteolin) or coumarin.

Aim: to evaluate the effects of brewing time and temperature on the antioxidant activities of chamomile basket infusion.

Materials and methods. 1 g of chamomile baskets and 100 ml of distilled water were infused at 70 and 100°C for 3, 5 or 10 min. The antiradical action of the brew was evaluated using 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging. The DPPH reagent is decolorized in the presence of antioxidant compounds. Absorbance was measured at 515 nm. DPPH determination was performed in triplicate samples. Statistical significance was set at 0.05.

Results and their discussion. A 5-minute chamomile basket infusion brewing at 100°C showed a significantly higher DPPH radical scavenging value than at 70°C. The 10-minute incubation at both temperatures was characterized by higher DPPH levels compared to the other 4 variants (3 and 5 min at 70 and 100°C). The studied parameter showed a general tendency to increase directly proportional to the time and temperature of incubation.

Conclusion: chamomile basket infusion can exert a health-promoting effect by neutralizing oxygen free radicals. Our experiment showed the most beneficial effect on redox balance as the infusion brewed at 100°C for 10 min.