УДК 61:615.1(062)(476-25)
ББК 52я73
А 43
ISBN 978-985-21-1258-1

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ST. BENEDICT'S THISTLE AND ST. JOHN'S WORT – ANTIOXIDANT ACTIVITY IN VITRO EVALUATION UNDER DIFFERENT INFUSING CONDITIONS

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Relevance. Oxidative stress is an imbalance between the production of free radicals and the activity/concentration of antioxidants responsible for neutralizing them in favour of the former. This condition results in the oxidation of cellular biomolecules, so it is among the most common etiological factors in the majority of contemporary diseases. The human body has effective antioxidant mechanisms, efficient in a healthy state. However, under overexposure of the body to prooxidant factors, oxidative stress can develop. Thus, supplementation with exogenous antioxidants is recommended. Many studies have shown that herbal teas are an important source of antioxidants. It is not surprising that they are so popular.

Aim: this study aimed to evaluate the *in vitro* antioxidant activity of an infusion of St. Benedict's thistle (*Cnicus benedictus* L.) and St. John's wort (*Hypericum perforatum* L.) prepared under various time and temperature circumstances.

Materials and methods. 1 g of herbs was added to 100 ml of distilled water. Three different times (3, 5 as well as 10 minutes) and two brewing temperatures (70 and 100 °C) were considered. The antioxidant effect of the infusions was measured by total antioxidant capacity (TAC). Assessment of TAC was performed using the colorimetric method. The value of TAC was calculated based on 6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid (Trolox) calibration curve.

Results and their discussion. The TAC values of the infusions, ordered from both St. Benedict's thistle and St. John's wort, depended on the incubation conditions. In both cases, the TAC of the infusions increased with the length of brewing time. Also, brewing at 100 °C was associated with a stronger antioxidant effect in each case, compared to 70 °C.

Conclusion: among the examined combinations of conditions for making herbal teas, St. John's wort and St. Benedict's thistle brewing both at 100 °C for 10 min is the most beneficial.