DOI: 10.5281/zenodo.4016806
UDC: 615.322.074:543.544:582.998

Determination of carotenoids in extracts from species of *Tagetes* and *Calendula*

***[1,3]Anna Benea, [2,3]Cristina Ciobanu, [1,3]Maria Cojocaru-Toma, [2,3]Nicolae Ciobanu**

[1]Department of Pharmacognosy and Pharmaceutical Botany, [2]Department of Drug Technology
[3]Scientific Center for Cultivation of Medicinal Plants
Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, the Republic of Moldova

Authors' ORCID iDs, academic degrees and contributions are available at the end of the article

[*]Corresponding author: anna.benea@usmf.md

Manuscript received August 07, 2020; revised manuscript September 03, 2020; published online September 15, 2020

Abstract

Background: Carotenoids have played a significant role in reducing the risk of chronic diseases. The most studied in this regard is β-carotene, present in species of *Tagetes* and *Calendula* genus. Objective of the study: Comparative analysis of β-carotene content in liquid and dry flowers extracts of *Tagetes* and *Calendula* species, cultivated in the collection of the Scientific Center for the Cultivation of Medicinal Plants of *Nicolae Testemitanu* SUMPh.
Material and methods: Dry extracts of flowers harvested in the budding-flowering phase, were obtained by repeated maceration and rotary evaporation, subjected to phytochemical evaluation by thin-layer chromatography (TLC) and UV-VIS spectrophotometry, equivalent to β-carotene.
Results: Beta-carotene was identified by TLC in hexan-ethyl acetate (50:50, v/v), retention factors were established. Caratenoid content (mg%) varied as follows: in *T. patula* L. (75.34±2.15), *T. erecta* L. (21.97±0.84), *C. officinalis* L. variety Natali (13.09±3.23), *C. officinalis* L. variety Diana (12.39±1.98), *C. officinalis* L. local population (10.99±0.06). The carotenoids content ranged in the dry extracts as well, determined in the highest amount in *T. patula* L. flowers (137.87±2.18 mg%).
Conclusions: This study demonstrated the opportunity for further research of *Tagetes* and *Calendula* varieties that could serve as sources of carotenoids for obtaining antioxidant phyto-pharmaceuticals.
Key words: carotenoids, vegetal products, dry extracts, spectrophotometry.

Cite this article
Benea A, Ciobanu C, Cojocaru-Toma M, Ciobanu N. Determination of carotenoids in extracts from species of *Tagetes* and *Calendula*. *Mold Med J.* 2020;63(4):23-26. doi: 10.5281/zenodo.4016806.