

SEASONAL VARIATION OF LIPOPHYLIC COMPOUNDS OF *URTICA DIOICA* L. LEAVES

DINAMICA ACUMULĂRII COMPUȘILOR LIPOFILI ÎN FRUNZELE DE *URTICA DIOICA* L.

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Objective: phytochemical characterization of *Urtica dioica* L. leaves and the selection of the raw materials with the highest content of sterols and carotenoids, in order to obtain pharmacologically active extracts.

Material and methods. The leaves were harvested for a period of 7 months (March – September) from Racari Village, Dambovită County, Romania, in 2010. The batches were codified as B1 (March), B2 (April), B3 (May), B4 (June), B5 (July), B6 (August), B7 (September). In order to confirm the identity of the leaves, macroscopic, microscopic and qualitative exams were undertaken. The sterols (free and glycosidic sterols) were assessed spectrophotometrically, based on the formation of dehydration products with multiple conjugated double bonds in the presence of concentrated sulfuric acid and ferric chloride (catalyst). The carotenoids content were determined, before and after their release from esteric forms, by assessing the absorbance at $\lambda = 460$ nm.

Results. The morphological and anatomical aspects concur with scientific literature. The leaves are thin and complete, with a triangular and pubescent lamina

(L=0.5 to 10 cm, l=0.3 to 5 cm). The margin is serrate and the apex is acuminate. The upper surface is dark green and the lower surface is light green. In all batches, the microscopic exam shows the following specific anatomical elements: subulate hairs and stinging hairs, secretory trichomes with bicellular heads and unicellular stalks, cluster-crystals of calcium oxalate. The active principles identified in the qualitative examination are: sterols, carotenoids, coumarines, flavonoids (except batch B4), polyphenolcarboxylic acids, tannins, proanthocyanidins, mucilages. The carotenoids determination indicates that the highest content of free and esteric forms are found in leaves harvested in June and July, respectively. Glycosidic sterols are prevailing. The leaves content of glycosidic sterols is increases with maturity of the plant. The highest content of free sterols was determined in samples harvested in May.

Conclusions. The leaves of *Urtica dioica* L. represent a complex source of active principles. The selected batch was B3. The selection of the batch was based on the total amount of carotenoids and sterols.

ANALIZA FARMACOGNOSTICĂ ȘI DINAMICA DE ACUMULARE A COMPUȘILOR TRITERPENICI ȘI FENOLICI DIN FRUNZELE SPECIEI *BETULA PENDULA* ROTH. (MESTEACĂN)

PHARMACOGNOSTICAL ANALYSIS AND SEASONAL VARIATION OF TRITERPENIC AND PHENOLIC COMPOUNDS FROM BIRCH (*BETULA PENDULA* ROTH.) LEAVES

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Obiective. Scopul studiului constă în analiza farmacognostică și determinarea dinamicii de acumulare a compușilor fenolici și triterpenici din frunzele speciei *Betula pendula* Roth. (mesteacăn).

Material și metode. Ca material s-au utilizat frunze de mesteacăn recoltate în anul 2011, din localitatea

Morărești, județul Argeș, în diferite stadii de dezvoltare – lunile mai, iunie, iulie și sfârșitul lunii august. Metodele utilizate au fost: analiza farmacognostică – examen macroscopic (la stereomicroscop), microscopic (pe secțiuni transversale, pulberi clarificate cu chloralhidrat și prin microscopie electronică), chimic calitativ, croma-