INTERNATIONAL E-CONFERENCE CONTEMPORARY PHARMACY: ISSUES, CHALLENGES AND EXPECTATIONS

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ABSTRACT BOOK

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Contemporary approaches to the search for plant biologically active substances and to determination of a phylogenetic position of plants on the basis of multidimensional taxonomy analysis techniques

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Introduction: an aim of our research is to develop new approaches to the directed search for sources of biologically active substances (BAS) among the official and nonofficial plants of Ukrainian flora on the basis of multidimensional taxonomy techniques.
Materials and methods: plant genera of Ukrainian flora; morphological methods: the study of taxons' vegetative and generative characteristics; chemical methods: BAS identification and quantification; physical and chemical methods: two-dimensional chromatography; IR/UV spectrophotometry; Microsoft Excel software: the procedure of name assignment to ranges and the function of array processing, a correlation analysis; a random numbers generation method.
Results: large plant genera of Ukrainian flora and flora of neighbouring countires were studied, chemical profiles of *Astragalus* L., *Galium* L., *Asperula* L., *Cruciata* Mill., *Melilotus* L., *Potentilla* L., *Artemisia* L., *Crataegus* L. genera were developed; the information weight of characters and taxon's individual characteristics, as well as a correlation between the chemical and morphological characters were established [1, 2]. On the basis of the graphs theory, dendrograms were developed, which enabled to: 1) put forward proposals regarding debatable issues relevant to separate species and genera sections; 2) establish paired relationships between species and built diagrams of their taxonomic relationships: 3) reveal evolutionarily ancient and advanced taxons and build taxons' hierarchical rows on the basis of group similarity coefficients; 4) establish species prospective for practical medicine, as well as from the point of view of scientific theory. For example, evolution of highly original chemotaxons (the coefficient of originality exceeded 100%) was demonstrated; the most promising species for in-depth study were: *A. penduliflorus, A. floccosifolius, A. melilotoides, A. cicer.*
Conclusions: the multidimensional (multifactor) analysis of species' chemical and morphological characters makes it possible to objectively introduce changes to phylogenetic systems of genera and families, it creates a possibility of goal-directed search for pharmacologically active materials of the plant sources.

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