THE DYNAMICS OF PLANT DIVERSITY IN LEVEL II EUROPEAN INTENSIVE FOREST MONITORING SYSTEM

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Abstract: The Study of biodiversity dynamic, in our case the plant species diversity, has the purpose to bring new scientific data about this characterization variable of forest ecosystems, used in level II European Intensive Monitoring System of Forest in multidisciplinary analyses.

Starting with year 2001 in Romania this activities are pursued in twelve different sites, established on an altitudinal transect along the Carpathian southern slope.

We used a method of research in accordance to International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests - biodiversity monitoring manual, for a good international intercalibration and a good transdisciplinary relationship. A survey plot has a total surface of 405 square meters composed of five polygons of 81 square meters (9X9 m). Assessments were made for each plot every two years. There have been identified 93 different species, from which, according to the vertical stratification imposed, 18,27% trees, 11,80% shrubs, 60,25% herbs and the rest 9,68% mosses.

From the multiannual floristic surveys we calculated an average or high floristic richness, in the selected plots, based on the Shannon-Wiener indices. The values of the indices varies between 4.880 at plot no.9 - Predeal in the year 2007 and 2,603 at plot no.13 – Mihaesti in the year 2009. These values must be correlated with other characteristics of ecosystem because they are dependent on random plant composition of the plot. For analyzing plant diversity time evolution we use Jaccard index, which is a similarity one. The results show that the Jaccard indexes for the plots are in general medium or low. So there are evident differences between annual plant diversity assessments.

Highlighting this evident differences and correlating them with the evolution of other variables assessed in forest monitoring system, like: soil condition, deposition, meteorological data and so on, is an efficient way of determining the forest ecosystems response to external factors and also to make models of further forest developing.

GENETIC RESOURCES OF THE SORBUS DOMESTICA L. IN THE FOREST FUND OF THE REPUBLIC OF MOLDOVA

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Abstract: True service tree (Sorbus domestica L.) is a species included in the Red Book of the Republic of Moldova. Indigenous tree of 15-20 m height, with squamiferous ritidom alike wild pear. The branches are vigorous, green-olive, mahogany, covered at the beginning with weathered soft hairs of white colour, then become glabrous; are presenting ring-like brachyblasts. Ovoid sharp pilous on top buds are slightly sticky, green-olive, the terminal bigger buds have a length of 8-12 mm. The leaves of 15-18 cm composed imparipennated with 13-21 oblongue folioles, acute, serrated, with the length of 3-5 cm, with white porous rahis. It flowers in May. The flowers have 5 styles of 1,5 cm in diameter, being grouped in corymbes. The fruit is ripening in September-October. The fruit is periform and globulous of 2-4 cm long, cored, green or mahogany, eatabile after being withered. The species vegetates in patches in South Europe, Little Asia, Crimea, West Caucasus, Balkan Peninsula, Central Europe and Mediterranean Sea region. It reclaims a mild safely climate, kept away from climatic excesses and is set up on a fertile weak acid-neuter relatively dry soil. In the Republic of Moldova appears sporadically in Codri and Tigheci tableland at an altitude of 250-270 m on brown and dark brown soils on sessile oak especially plant formations with lime and ash trees. It grows isolated in the composition of first and second level of a stand or forest. As an object of study served the trees that have reached the maturity level and fructify, are 6 to 18 m high and thick in diameter between the range of 16 to 34,1 cm. The fruit of arbore vary on shape (periform and globulous). Fruit mass varies between 2,7 g to 7,6 g. There was emphasized a great amplitude of variation of fruit mass and arbore’s crown (2,3 - 13,9 g). The length of fruit varies between 15,0 mm to 20,5 mm. The emphasized trees vegetate on plane or undulated sides of south-west exposition at an altitude of 125-250 m. Arbore regularly produce fruit that are dispersed by birds or animals, fact that was being demonstrated by seedling of different ages. It is necessary inventorying the size and population’s structure with the aim to preserve in situ the domestic sorb and to undertake ex-situ conservation measures by creating plantations of clones or families.