X International Agriculture Symposium, Jahorina, 3-6 October 2019, Bosnia and Herzegovina

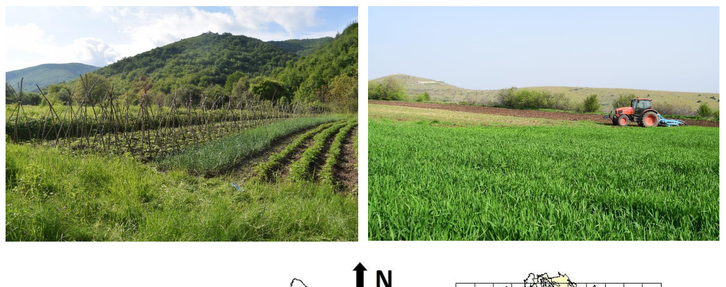
LAND USE AND PLANT BIODIVERSITY IN TWO REGIONS OF BULGARIA

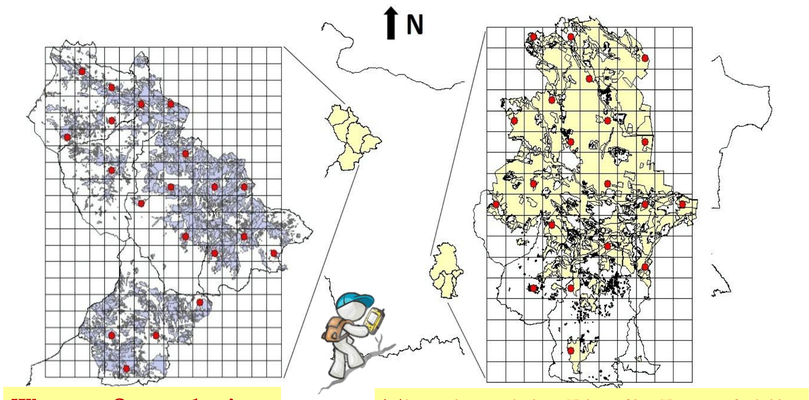
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Introduction

Plant species diversity in the agricultural land and managed forests depends strongly on the land use type and management practices applied. We present results of a two-year assessment of plant diversity in different types of agricultural and forestry territories, ranging from cereal fields to fruit orchards and from coppice forests to protected territories. The results are discussed in the light of nature conservation and sustainable use of plant resources.





Western Stara planina

Thracian plain: Plovdiv-Pazardzhik



Materials and methods

The two-year studies took place in two regions in Bulgaria – the first one was in the Thracian plain between Plovdiv and Pazardzhik, and the second one – Western Stara planina and the adjacent territories. A structural analysis of plant diversity was performed in experimental plots, representing more than 30 land use types. Thorough analysis of the floristic elements and biological types was performed.



Code	Specification
A11	Wheat
A16	Maize
A21	Potatoes
A31	Sunflowers
A53	Strawberries
A41	Tobacco
A54	Vegetables
A62	Lucerne
A73	Arable land without plants
A74	Flowers area
A81	Apples
A83	Pear fruit
A84	Nuts tree
A92	Vineyards
B12	Unmanaged set-aside
C11	Meadow
C12	Grazing land
C31.4	Meadow orchard
C32	Pasture orchard
D11	Scrublands
E11	Solitary trees
E12	Tree lines and avenues
E13	Hedges and bushes
E21	Buffer strips
E22	Ruderal, grass and herbal fields
E31	Springs and spring swamps
E32	Small and medium-sized flowing waters
E33	Ditches
E34	Small water bodies
E51	Dirt/gravel track
N11	Forest

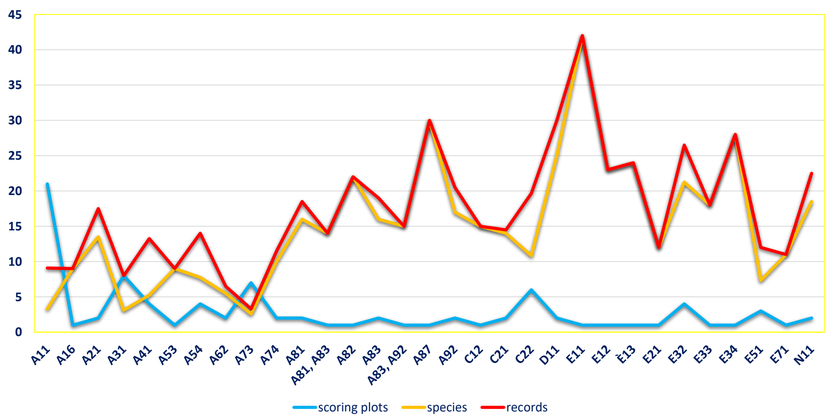
Results and Discussion

The results revealed that character of plant diversity depends on numerous factors; however, the most important being the land use type.

The highest plant diversity was recorded in the following land use types: E32, A21, A81, A83, A84, E51. All these territories are situated along rivers and small streams, often with tree vegetation. The poorest diversity was established in the land use types A73, A31, and A11, which represent annual crops (cereals, corn, sunflower) or fallow land. Intermediate values of plant species diversity were documented in the remaining land use types.

An important characteristic of the two regions is the relatively high share of medicinal plants in the flora in both regions – 27.8 % in Plovdiv-Pazardzhik and 25.7 % in the Western Stara planina. This fact suggests additional opportunities for use of the natural plant resources, besides the traditionally practiced agricultural activities.

The comparison between two regions of study revealed that the indigenous flora of Western Stara planina is more conserved. This is due to the orographic characteristics of the region, which affect significantly the land use type. Eleven orchid species of conservation importance were found in this region.



The share of weeds and ruderal plants was more than 40% in Plovdiv-Pazardzhik region and considerably less (25%) in Western Stara planina. However, it was not studied at what extent the presence of weeds is affected by application of pesticides.

Acknowledgment

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