

Eastern Alpine and Dinaric Society
for Vegetation Ecology

36th Meeting

Osijek (Croatia), 17–20 June 2015

Book of Abstracts



Kitaibela vitifolia

36th Meeting of Eastern Alpine and Dinaric Society for Vegetation Ecology
Book of Abstracts

Editors: Željko Škvorc, Jozo Franjić, Daniel Krstonošić

Published by: Croatian Botanical Society

Zagreb, 2015

ISBN 978-953-99774-8-9

CIP zapis je dostupan u računalnome katalogu Nacionalne i sveučilišne knjižnice u Zagrebu
pod brojem 000907913

Poster presentation



Kitaibela vitifolia



Analysis of the functional composition of the hilly forest landscape in the Monti Sibillini National Park

Nicola Postiglione, Federico M. Tardella, Andrea Catorci

School of Biosciences and Veterinary Medicine – UNICAM University of Camerino via Pontoni 5, I-62032 Camerino (MC), Italy

Corresponding author e-mail: andrea.catorci@unicam.it

Understanding ecological processes in forest communities is one of the most important goals for forest management and biodiversity conservation. Because the multi-dimensional complexity of ecological systems can be broken down into hierarchical levels, each characterized by a low number of interacting factors and by a specific pool of species, it is important to take into account the compositional and functional dimensions of biodiversity at different hierarchical levels.

The research aim was to test if the hierarchical pattern of species assemblage in the sub-Mediterranean forest communities (Monti Sibillini National Park, central Italy) underlies a hierarchically structured pattern of functional strategies.

In 205 plots (20 x 20 m), selected using a random stratified sampling design, we collected data on site characteristics and species cover. Data on species traits (life form, occurrence and type of storage organ and vegetative propagation, leaf anatomy and persistence, seed mass, flowering period) were collected from existing databases and supplemented by field observations. Data on bioindicator values of each species were desumed from literature. Species data were elaborated using cluster analysis. Differences in altitude, slope aspect, slope angle and bioindicator values between pair of clusters at each clustering step were performed using the Wilcoxon-Mann-Whitney test. Indicator traits of each cluster were highlighted using indicator species analysis.

The results emphasized that differences in species composition between groups of relevés at each partition of the dendrogram resulted in patterns of functional responses to stress intensity, involving traits related to strategies of resource acquisition, retention and reproduction. These differences were more marked in the herb layer than in the tree and shrub ones. More specifically, the functional responses in the herb layer followed similar patterns regardless of the hierarchical level under consideration. In general, the greater stress intensity due to the higher water stress and the lower nutrient availability, matched with the lower number of indicator trait states and functional strategies in the herb layer (therophytes and chamaephytes, later reproduction, summer green leaves, absence of storage organs). The least stressful condition was marked by a set of trait states devoted to a fast growth and reproduction strategy, long-lived leaves, and occurrence of storage organs.