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HANS EM
FACULTY OF FOREST SCIENCES
LANDSCAPE ARCHITECTURE AND
ENVIRONMENTAL ENGINEERING



BOOK OF ABSTRACTS

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*Better forestry,
for better forests,
for a better planet.*

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Ul. 16 Makedonska brigada br. 1
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MK-1000 Skopje
Republic of North Macedonia
e-mail: sumarski@sf.ukim.edu.mk
e-address: www.sf.ukim.edu.mk



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Analysis of Croatian *Ophiostoma novo-ulmi* populations – insight into changes occurring over time

Zorana Katanić^{1*}, Ljiljana Krstin¹, Helena Vilc¹, Marilena Idžojić² and Mirna Ćurković Perica³

¹ Department of Biology, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia

² Department of Forest Genetics, Dendrology and Botany, Faculty of Forestry and Wood Technology, University of Zagreb, Zagreb, Croatia

³ Department of Biology, Faculty of Science, University of Zagreb, Zagreb, Croatia

* Corresponding author: zkatanic@biologija.unios.hr; zorana.katanic@gmail.com

Abstract:

Ophiostoma novo-ulmi is a phytopathogenic ascomycete fungus that causes Dutch elm disease (DED) – a highly destructive disease responsible for killing numerous North American and European elms (*Ulmus* spp.). DED spreading began in the early 20th century and it was originally caused by *Ophiostoma ulmi*, while *O. novo-ulmi* emerged in the mid-20th century, initiated an even more destructive DED pandemic, and eventually became the main DED pathogen. Two *O. novo-ulmi* subspecies (*O. novo-ulmi* ssp. *novo-ulmi* and ssp. *americana*) are widespread throughout Europe and their hybrids are frequently found in areas of overlapping distribution. Following the DED survey across Croatia conducted in 2012, elms were resampled in selected Croatian forests (sites Nova Kapela and Jastrebarsko) in 2021. An increase in disease incidence at site Nova Kapela was observed in 2021 compared to 2012, while at site Jastrebarsko a decrease in disease incidence was detected. Molecular characterization of *O. novo-ulmi* isolates based on analysis of the *col1* and *cu* gene sequences indicated that in 2021, similar to 2012, the *O. novo-ulmi* ssp. *novo-ulmi* is more frequent compared to *O. novo-ulmi* ssp. *americana* which was only detected at site Nova Kapela in 2021. *O. novo-ulmi* ssp. *novo-ulmi* x ssp. *americana* hybrids were found at both sites in both years of investigation. Obtained results point out that variations in disease incidence do occur over time, but the dominance of *O. novo-ulmi* ssp. *novo-ulmi* and hybrids over *O. novo-ulmi* ssp. *americana* is retained in investigated sites.

Keywords: Dutch elm disease; elms; temporal variability



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