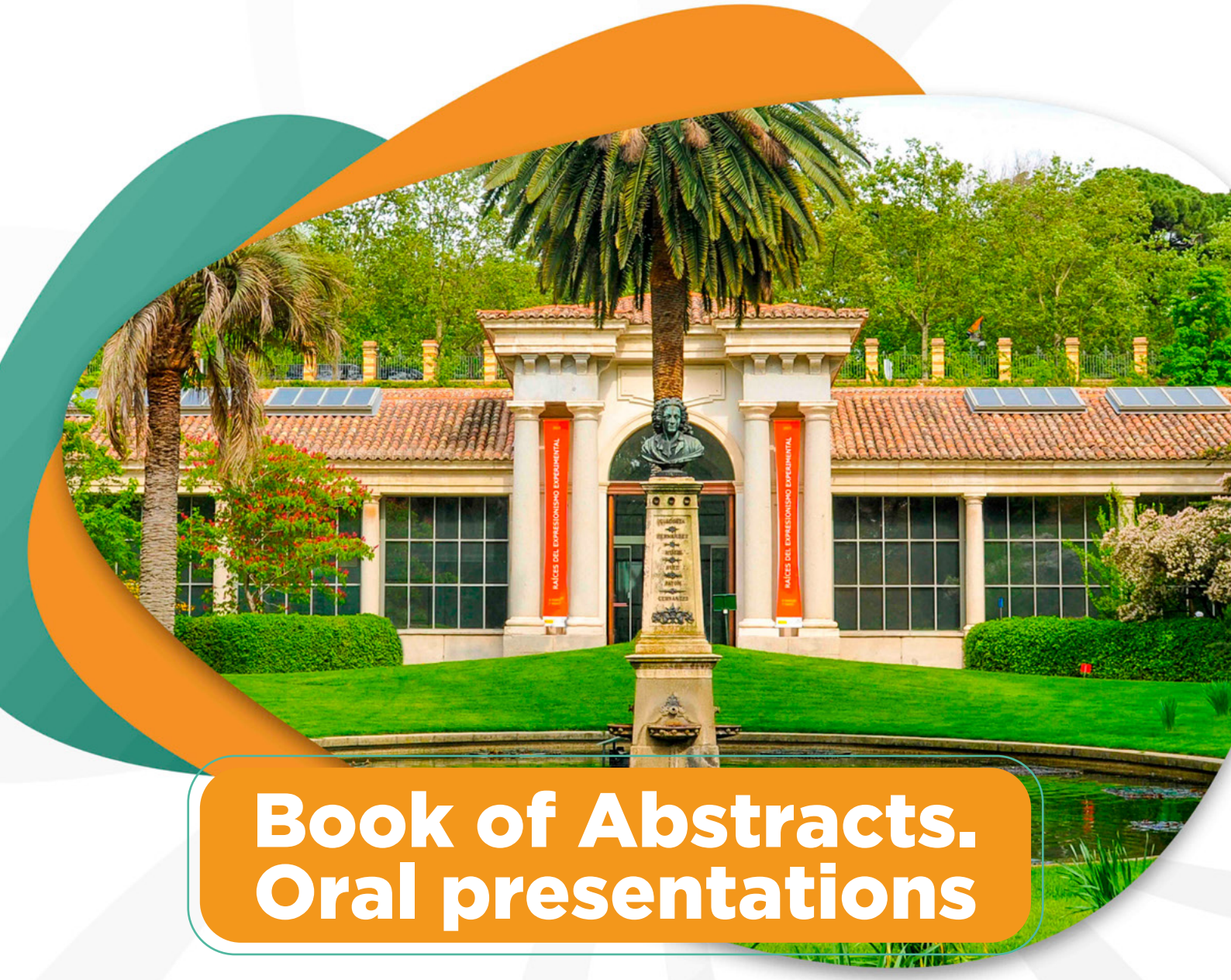
IBC 2024

XX International Botanical Congress Madrid Spain



Book of Abstracts. Oral presentations

July, 21st - 27th, 2024

ibcmadrid2024.com • info@ibcmadrid2024.com

#IBC2024

SEBOT
SOCIEDAD BOTÁNICA ESPAÑOLA

CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

REAL JARDÍN BOTÁNICO

Techinical Secretariat:
Fase20 congresos
C/ Narváez 15 1°izq
28009 Madrid - Tel. 902 430 960
www.fase20.com - info@fase20.com

Title of the Work: Title of the Work: : XX International Botanical Congress IBC 2024, Spain. Book of Abstracts. Oral presentations .

Publisher: Fase 20 Ediciones

C/ Narváez, 15- 1º Izqda.- 28009 MADRID

www.fase20.com

ISBN: ISBN: 978-84-09-63655-6

stations of the Madrid Region Palynological Network in relation to the potential pollen sources and to define aerobiological risk areas of the Madrid Region based on homogeneous patterns of occurrence and intensity of the main pollen taxa. Multiple clustering approaches were conducted to group (i) the sampling stations of the aerobiological network and (ii) all pixels of the Madrid Region (central Spain). The clustering dendrogram based on vegetation distribution was compared to those based on airborne pollen characteristics. The results showed a great correspondence between potential pollen sources distribution and airborne pollen dynamics. The Madrid Region was divided into six aerobiological risk areas based on the potential pollen sources. These risk areas were ordered following a clear anthropogenic gradient, with one cluster in the centre covering the most urbanised areas, another one covering agricultural lands in the south and southeast, and four more clusters in the forest-dominated environments of the Madrid Region. Spatial regionalisation in environmental risk assessment favours the application of management plans by the institutions responsible of the management of public health systems and allows resources to be optimised. The mapping of risk areas based on impact of allergenic plant species constitute a step forward in the management of the biological air quality of Madrid Region.

S.46.2 Effects of urbanisation on airborne pollen spectrum in cities

Marina Muñoz-García[1], Enrique de Gálvez-Montañez[1], Rocío Ruiz Mata[1], M. Mar Trigo, Marta Recio[1], Antonio Picornell[1]

1 Department of Botany and Plant Physiology. University of Málaga, Malaga, Spain.

Climate change is affecting plant distribution, but human-driven land use changes are also playing a crucial role in it. Accelerated urbanisation drastically alters the landscape, generating a major impact on herbaceous plant communities in urban environments and, consequently, altering the airborne pollen concentrations in cities. Two of the most relevant impacts are vegetation removal for construction, as well as the introduction of ornamental species. The aim of this study is to analyze trends in the pollination period of herbaceous and ornamental species in the city of Malaga due to urban expansion. To do this, aerobiological data from the period 1992-2023 were used. The data were obtained by means of a Hirst-type volumetric pollen sampler installed on the roof of the Faculty of Sciences of the University of Malaga. The samples were mounted and counted following the methodology proposed by the Spanish Aerobiology Network. The main pollen season (MPS) was defined by fitting a logarithmic function to the accumulated pollen concentrations. Then, trends in the parameters of the MPS were calculated employing linear regressions. The results reveal a significant decrease in the annual pollen integral of herbaceous taxa growing in agroforestry areas such as Amaranthaceae, *Plantago,* and *Rumex,*and a significant increase in pollen from nitrophilous species such as *Urtica membranacea*. *Olea* and *Platanus* pollen types have also increased their presence in the atmosphere due to the expansion of olive tree crops and the growth of ornamental individuals, respectively. The expansion of urban areas causes the loss of habitats as well as the modification of plant communities, which results in a modification of the air pollen content. Therefore, urban expansion can be involved in a significant change in seasonal allergies in the urban population.

S.46.3 Implementation of the PhenoFlex framework for forecasting the start of the main pollen season in the context of climate change

Antonio Picornell[1], Enrique de Gálvez-Montañez[1], Marina Muñoz-García[1], Rocío Ruiz-Mata[1], Marta Recio[1], Eike Luedeling[2], M. Mar Trigo[1]

1 Department of Botany and Plant Physiology. University of Málaga, Málaga, Spain. 2 Department of Horticultural Science, Institute of Crop Science and Resource Conservation (INRES), University of Bonn, Germany

Climate change is affecting the flowering seasonality of many plant species, disrupting the dynamics of their life cycles and triggering changes in ecosystems. These changes are not uniform across all species and geographic regions, and local monitoring is required to gauge future phenological shifts and to establish mitigation strategies. In this context, aerobiological sampling has proven to be a valuable tool for monitoring the flowering onset in anemophilous species. The start date of the main pollen season for a certain pollen type in a given location is usually linked to the flowering onset of the taxa that produce it. This has encouraged the development of different models in recent years to