

BOOK OF ABSTRACTS

3rd International Conference on Plant Biology (22nd SPSS Meeting)



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Serbian Plant Physiology Society

Institute for Biological Research "Siniša Stanković", University of Belgrade

Faculty of Biology, University of Belgrade

**3rd International Conference
on Plant Biology
(22nd SPPS Meeting)**



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SECTION 3

**Biodiversity,
Conservation and
Evolution of Plants**

component, cluster and two-way cluster analysis. Principal Component Analysis revealed 5 PC components with Eigen value >1, which explained 78.70% of the total variability. The PC analysis identified oil quality traits that contributed most to the variation of analyzed genotypes and can be used for facilitating the selection of desirable characteristics in rapeseed breeding. Both cluster analysis and two-way cluster analysis helped the identification of genotypes with similar fatty acid and tocopherol composition. Two main groups could be identified on the dendrogram, the first having two genotypes and the second comprising 44 genotypes. Three genotypes did not belong to any group. The extent of variation within the breeding material was clearly illustrated and the genotypes from one side, and analyzed oil quality traits from the other side, were effectively classified on the heatmap. The obtained results confirmed that classification and characterization of rapeseed germplasm and the selection of superior genotypes for commercialization or as parents in future hybridization program can be effectively performed by using multivariate analysis.

Keywords: rapeseed, fatty acids, tocopherols, multivariate analysis

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Do pollinators prefer bigger floral organs? A case study on *Iris pumila* L.

PP3-3

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Angiosperm flowers serve as an advertisement for pollinators and are, therefore, believed to be shaped by pollinator-mediated selection. The large flower size, which is one of the distinct characteristics of the genus *Iris*, might have evolved under the strong selective pressures imposed by pollinators, either because larger flowers indicate more rewards or because the pollinators can detect them from a greater distance. To test the role of visual floral signals in attracting pollinators and, consequently, pollination efficiency, we compared the phenotypic expressions of flower height and centroid size of petaloid floral organs: falls, standards and style arms, as well as anthocyanin absorption between naturally pollinated and non-pollinated flowers of *I. pumila* plants grown in a common-garden experiment. Our results indicated that *I. pumila* pollinators generally preferred taller flowers with greater organ sizes compared to the alternative ones. However, the direction of pollinator-mediated selection appeared to be strongly flower organ-specific: positive on fall, negative on style arm and neutral on standard size. The observed results are in agreement with the functions that each of these floral structures has in the pollination process: standards are a long-distance reward signals, falls are landing platform for pollinating insects, while style arms, as upper parts of the pollination tunnels, promote pollen deposition. We failed to corroborate the existence of pollinator-mediated selection on anthocyanin absorption. This suggested that some other aspects of flower colour might be more attractive to insect pollinators, or that different biotic or abiotic factors could account for the maintenance of flower colour polymorphism in *I. pumila*.

Keywords: floral organ size, anthocyanins, pollinator attraction, *Iris pumila*

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ANALYSIS
LABORATORY EQUIPMENT



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