



**XI INTERNATIONAL SYMPOSIUM OF
AGRICULTURAL SCIENCES**

BOOK OF ABSTRACTS

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**26-28, May, 2022
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P2_27

***In situ* characterisation of Serbian autochthonous pear (*Pyrus communis* L.) genotypes**

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Abstract

Pear is an important pome fruit species in the Republic of Serbia, with average production of 57,793 tonnes (2016–2020). Regardless of a wide range of new cultivars, world pear production relies on a small number of mostly old released cultivars. So far, the work at the Fruit Research Institute, Čačak (FRI) has been mainly focused on developing new pear cultivars and evaluation of *ex situ* genotypes. In recent years, the FRI work on assessing genetic variability in autochthonous pear material has been intensified. To avoid the loss and aiming to document, preserve and encourage the use of autochthonous material, seventeen genotypes corresponding to old cultivars or landraces were sampled in individual growers' orchards in central/southwestern Serbia. This study presents the results of *in situ* characterisation of main biological properties – flowering phenophase, harvest maturity, pomological properties (morphometric, chemical, organoleptic) and field resistance to causal agents of diseases (pear scab and fire blight) in the assessed genotypes. The earliest onset of flowering was recorded in ‘Vodenjaja’ (April 02nd) and the latest in ‘Kantaruša’ (April 21st). Regarding harvest maturity, the genotypes were divided into the groups from early [‘Beli Mednjak’ (July 23rd)] to very late [‘Kantaruša’ and ‘Takiša’ (October 05th)]. The highest fruit weight was determined in ‘Kantaruša’ (364.86 g), while the lowest was in ‘Takiša’ (20.49 g). The best fruit quality was found in ‘Takiša’ [soluble solids (14.85%); total sugar (10.33%)], whilst ‘Kantaruša’ was characterised by the highest total phenols (174.50 mg GAE/100 g FW) and free radical scavenging activity (70.97%). The highest total anthocyanins were found in ‘Lubeničarka’ (2.71 mg/100 g FW). All of the studied genotypes showed field resistance to fire blight and most of them to pear scab. Therefore, Serbian pear genotypes appear to carry useful traits that provide substantial potential for their use in future breeding programmes and production with reduced chemical inputs.

Key words: European pear, indigenous cultivar, landrace, fruit quality, resistance