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Biochemical parameters related to butternut squash fruit nutritional and sensory quality: a preliminary screening

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Butternut squash belongs to species *Cucurbita moschata* Duch. ex Poir. The fruits of the type are cream coloured, with or without very shallow grooves; small sized and weighted, mostly pear or club shaped ("bell type"). Owing to biologically active components from the orange fruit flesh, butternuts are considered delicious functional food, together with other *moschatas*. Therefore, maintaining good yields while improving nutritional and sensory qualities would be among the most important goals in breeding butternuts intended for cultivation in specific areas.

This study was aimed to explore the butternut squashes in terms of biochemical parameters (dry weight, sugar, protein, carotenoids, and cellulose percentage; pH and Brix) related to fruit nutritional and sensory quality. Since no single butternut variety originates from Serbian breeding centres, the accessions chosen for the analyses are foreign cultivars that are a part of *Cucurbita* collection of the Institute of Field and Vegetable Crops in Novi Sad, Serbia. The fruit samples were from field-grown plants, taken at full maturity stage and analysed by standard methods.

Although significantly variable among the accessions (except pH), all the parameters were within the range commonly reported for this squash type. Protein percentage was with the highest coefficient of variation, and pH with the lowest (24.4 and 3.6, respectively). Although moderate, the intervals of variation determined for sugar (0.7) and carotenoids (2.3) percentage provide the basis for breeding for improved fruit quality. Percentages of dry weight, sugar and carotenoids were positively correlated, and the fruits with higher values of the parameters generally had lower pH.

The results of this preliminary screening should be useful when selecting butternut squashes for crossings aimed to breed varieties with improved quality, adapted to the environments of Southeast Europe.