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BIOCHEMICAL CONTENT OF MULBERRY FRUITS

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Abstract:

The aim of the present study was to establish the biochemical content of white and black mulberry fruits grown in the South West and West Region of Romania (Gorj and Timis County).

This study investigated mineral compositions, total antioxidant capacity, total polyphenols content, total soluble solids content. In black mulberry fruits (*Morus nigra*) were observed the highest value of the total antioxidant capacity and total phenolic content. The interaction between fruit color and sampling location showed significant effect on antioxidant capacity. The total antioxidant capacity was analyzed by using the spectrophotometric method – CUPRAC method and the total polyphenols content was evaluated by Folin Ciocalteu method.

• Material and method



- The fruits of **white mulberry** and **black mulberry** (at the ripe stage) from Gorj county and Timiș.
- two genotypes** were taken into analysis (**2 trees**)
- Fruit **weight**, **moisture**, **total soluble solids (TSS)**, **total dry weight (TDW)** and **pH** were determined by using fresh fruit samples shortly after their arrival to the laboratory
- Spectrophotometric methods: **Ascorbic acid**, **total antioxidant capacity (TAC)** by **CUPRAC** method.

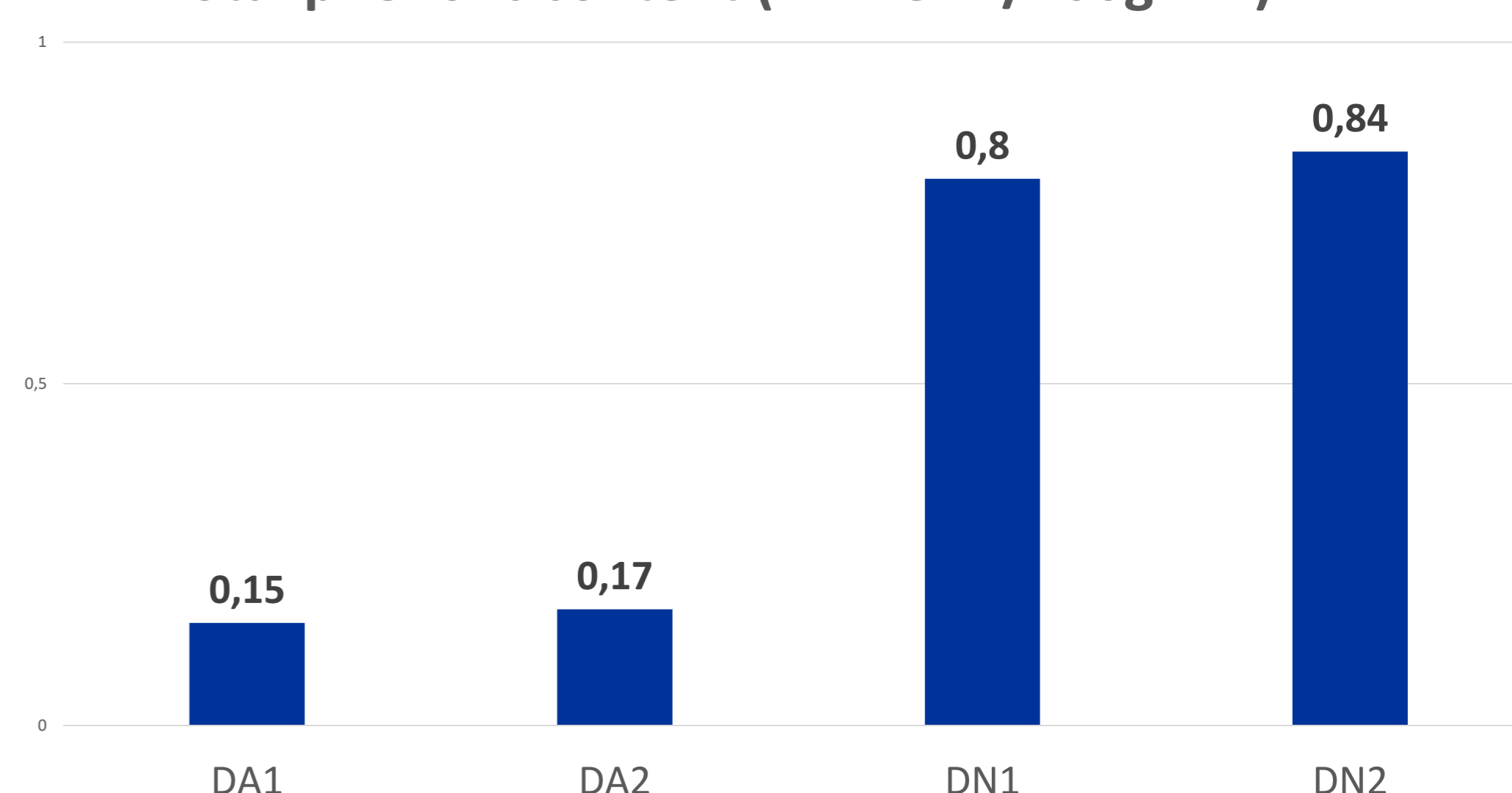


• Results and discussions

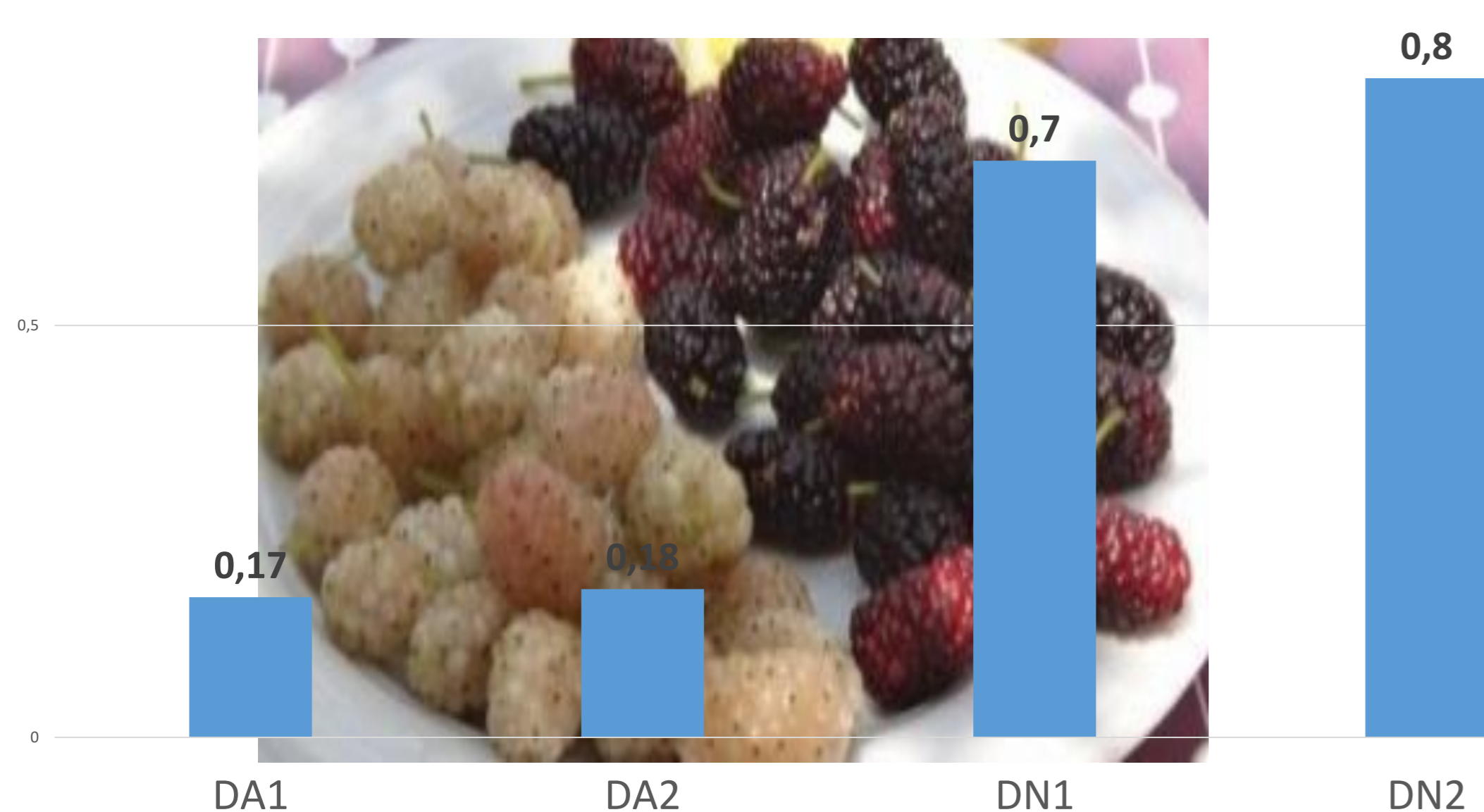
Species		Fruit weight (g)	Moisture (%)	TDW (%)	TSS (%)	pH
Morus alba	DA1	3.85 ± 0.34	73.65 ± 2.92	23.35 ± 2.23	19.14 ± 3.9	5.51 ± 0.13
	DA2	3.89 ± 0.33	75.87 ± 3.02	24.13 ± 2.03	18.28 ± 7.4	5.22 ± 0.34
Morus nigra	DN1	4.40 ± 0.34	77.69 ± 3.17	22.31 ± 2.30	16.7 ± 2.34	4.09 ± 0.04
	DN2	4.38 ± 0.33	76.16 ± 3.34	23.84 ± 1.98	16.3 ± 2.14	4.27 ± 0.05

TDW: total dry weight; TSS: total soluble solids ;Values (mean±SD) in the same column are not significantly different at P<0.05

Total phenolic content (mM GAE/100g FW)



Total antioxidant capacity (mM Trolox/g FW)



• Conclusions

The results indicate that all the studied mulberry fruits are a valuable horticultural product, based on their rich and beneficial nutrient composition and may be useful in a balanced diet. Their nutritive and phytomedicinal potentials are increased by their higher phenolic contents with antioxidant activity.

The current work is the first of its kind and it may serve as a source for new reference data, while also enhancing public awareness concerning the consumption of these unconventional fruits. In addition, this study brings numerous arguments towards the standardization of these fruits as potential healthy foods and their use in food and pharmaceutical industries.