

TOTAL PHENOLIC AND FLAVONOID CONTENTS AND ANTIOXIDANT POTENTIAL OF FRUIT METHANOLIC EXTRACTS OF THREE TRADITIONAL PEAR VARIETIES FROM SERBIA

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Introduction

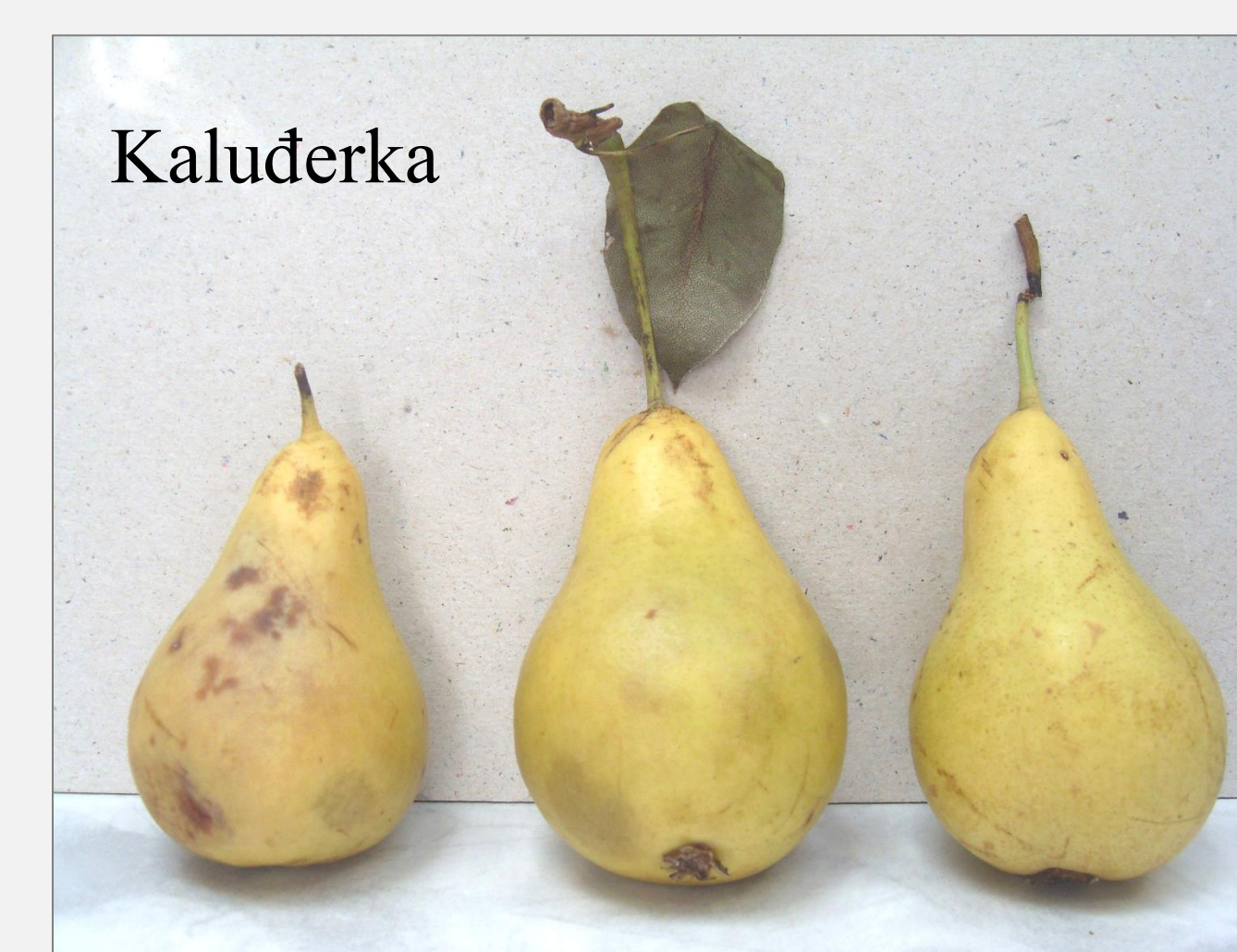
Jagodarka is almost disappeared traditional variety. The ripening period is in late May and early June. The fruit is very small (15-20 g), elongated-pear-shaped. The peel is thick, shiny, yellow-green, the fruit is juicy and rots rapidly.



Ilinjača ripens in mid-July. The fruits are small to medium-sized (20-30 g), pear-shaped, with greenish-yellow peel. The flesh is white, medium sweet.



Kaluđerka ripens in October. The fruit is large (up to 250 g), elongated asymmetrical pear-shaped, covered with thick, dry, smooth skin. The fruit is tasty, suitable for transport.



Material and Methods

Pear fruits were collected in central Serbia during ripening period. The whole fruits were stored at -20°C, and extracted with methanol. Total phenolic and flavonoid contents of methanolic extracts at concentrations of 25 µg/mL were determined spectrophotometrically, and antioxidant activity was evaluated using DPPH, ABTS and FRAP assays.

Results

Conclusion

The results indicate that examined varieties can be used as potential source of phenolic bioactive compounds.

Extracts		TPC (mg GAE/g)	TFC (mg QE/g)
Varieties	Fruit part		
Jagodarka	flesh+peel	97,77±3,14	12,28±1.02
Ilinjača	flesh+peel	91,22±1,77	21,61±0.37
Kaluđerka	flesh+peel	116,68±7,52	18,61±1.36

Table 1. Total phenolic content (TPC) and total flavonoid content (TFC) of three pear varieties extracts.

Extracts		DPPH reduction (IC ₅₀ , µg/ml)	ABTS reduction (mg AAE/g)	Fe 2+ reduction (µmol/Fe(II)/g)
Varieties	Fruit part			
Jagodarka	flesh+peel	24,78±2,21	1,23±0.12	564, 67±19,5
Ilinjača	flesh+peel	45,95±0.39	2,11±0.13	743,33±11.01
Kaluđerka	flesh+peel	15,45±1,57	1,41±0,18	823±12,12

Table 2. Antioxidant potential of three pear varieties methanol extracts.