

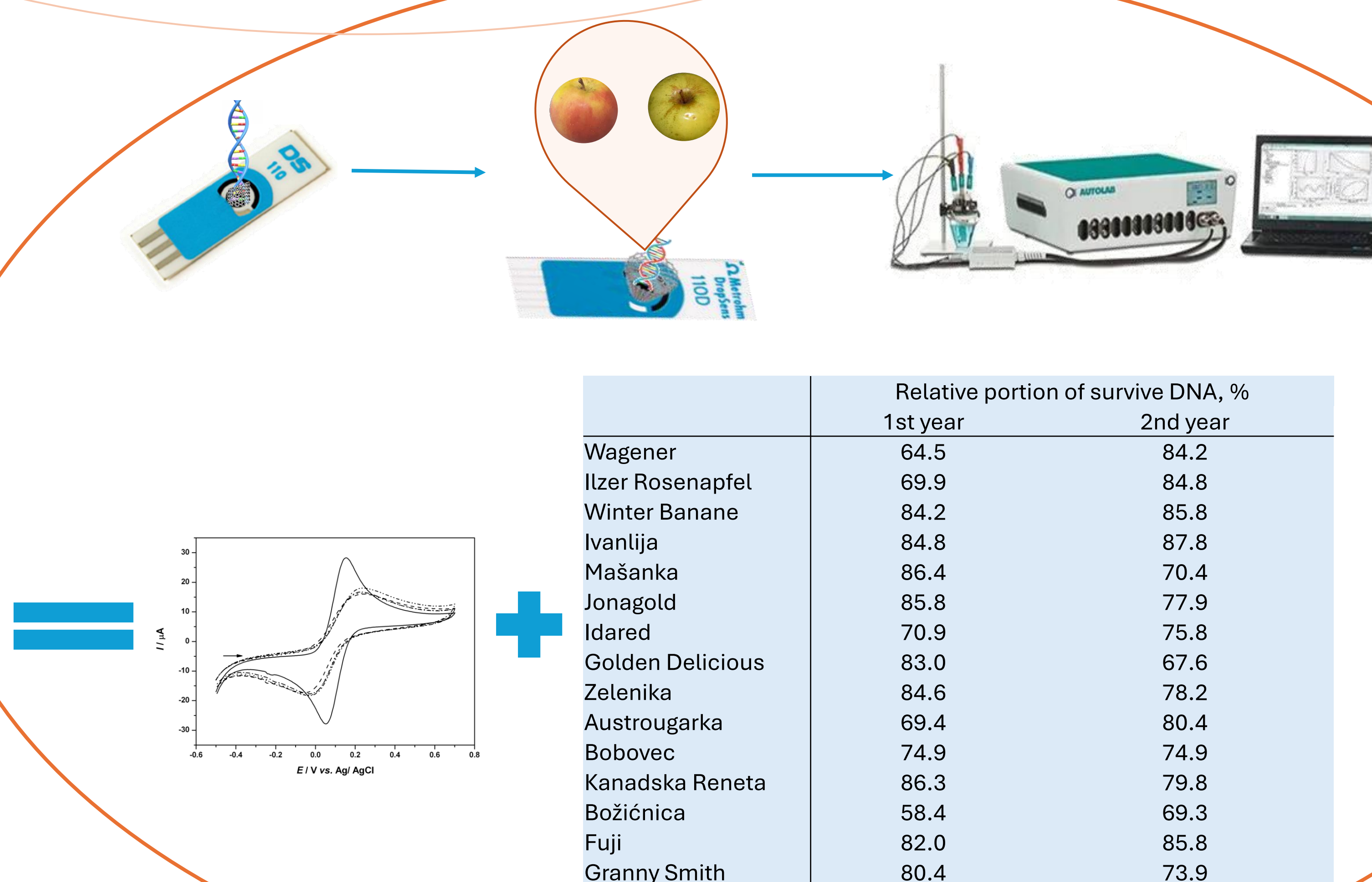
THE ANTIOXIDATING EFFECT OF POLYPHENOLS FROM APPLE JUICE DETERMINED USING AN ELECTROCHEMICAL BIOSENSOR

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An electrochemical biosensor was applied to determine the juice polyphenols antioxidant effect of 10 traditional and 5 commercial apple cultivars. DNA was used as a biologically active sensor component and cyclic voltammetry as an instrumental technique. The antioxidant effect was monitored over two years every three months in the apple juice extracts.



The results have demonstrated that the addition of apple juice extracts from both, traditional and commercial apple cultivars, to the cleavage solution reduces the degree of DNA degradation and shows a portion of survived DNA as follows: 43.23% – 94.99% (the 1st year of the research) and 57.85% – 94.11% (the 2nd year of the research). ‘Mašanka’, ‘Kanadska Reneta’ and ‘Ilzer Rosenapfel’ extracts of traditional apple cultivars and ‘Jonagold’ and ‘Fuji’ extracts of the commercial apple cultivars had the best antioxidant effect on the surviving DNA.

From this research could be concluded that juice from traditional apple cultivars has a better antioxidant effect on the portion of survived DNA (69%-87%) in comparison to juice from commercial apple cultivars (67%-85%).
These results are probably a reflection of the polyphenol profile of the examined cultivars.