

**POLYPHENOLIC PROFILES OF TRADITIONAL AND
INTERNATIONAL APPLE AND PEAR CULTIVARS USING HIGH-
PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)**

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Recent epidemiological studies have shown the linkage between reduced risk of chronic human diseases and the consumption of food rich in polyphenols, such as fruits. Apple and pear cultivars are the most abundant fruits consumed in Bosnia and Herzegovina. There is an increasing attention paid to the traditional apple and pear cultivars and related products, due to their nutritional and high antioxidant properties. The aim of this study was to investigate the polyphenolic profiles of 22 apple (19 traditional, 3 international) and 12 pear (11 traditional, 1 international) cultivars. For each apple and pear variety, both peel and pulp were analysed. Quantitative analysis of phenolic compounds was carried out by using high-performance liquid chromatography with diode-array detection. Among apple and pear cultivars, procyanidins and chlorogenic acid, followed by rutin, gallic acid and quercetins were predominant individual polyphenols, while contents of phloretin, phloridzin (apples) and arbutin (pears) were the lowest. Peel and pulp from traditional apple cultivar 'Prijedorska zelenika' had significantly the highest level of polyphenols. Within pear varieties, traditional cultivar 'Debelkora' showed the greatest polyphenols content. The results revealed significant differences between traditional and international apple and pear cultivars. Likewise, polyphenols content differed among the fruits peel and pulp, where the apple and pear peels contained higher polyphenol amounts. Generally, traditional apple and pear cultivars had higher polyphenols content compared to the international cultivars. Therefore, traditional apple and pear cultivars may be used for polyphenolic enriching of various fruit products made from international apple and pear cultivars.

Keywords : Apple, pear, polyphenols, HPLC

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