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PP93: Nutritional and chemical study of strawberries and raspberries grown in the north of Portugal

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Red fruits such as strawberries and raspberries are worldwide consumed for their flavor and well-known beneficial effects in Human health. These fruits are called superfoods for their high content of phenolic compounds, fiber, iron, and vitamin C, among others, which confer them anti-inflammatory, antioxidant, antibacterial, depurative, and diuretic properties. For these reasons, is it is of great importance the study of different varieties of these red fruits in order to highlight their beneficial properties and encourage their consumption [1,2]. In this study, 'Portola' strawberry and 'Kweli' raspberry fruits were analyzed in terms of nutritional value, following AOAC procedures. The chemical composition was also assessed in what concerns sugars, by HPLC-RI, and fatty acids, by GC-FID. Their hydroethanolic extracts (ethanol:water 80:20, v/v) were also assessed regarding their antioxidant properties, namely the lipid peroxidation inhibition capacity (TBARS assay) and anti-hemolytic activity (OxHLIA assay). In terms of nutritional value, carbohydrates were the main macronutrients found in the two fruits, with raspberries presenting almost 2-fold higher concentration than strawberries, thus also generating a higher energy value. Regarding the composition in free sugars, fructose and glucose were detected, with predominance of fructose. Also, 21 fatty acids were identified in raspberries and 22 fatty acids in strawberries, with linoleic acid being the most abundant in both fruits. As expected, considering their chemical composition, both fruits presented a strong antioxidant capacity, being able to inhibit lipid peroxidation (TBARS) and oxidative hemolysis (OxHLIA). The results obtained in the present study provide information on the nutritional and chemical composition of 'Kweli' raspberry and 'Portola' strawberry fruits, as well as their antioxidant activity, corroborating the importance of their inclusion in the diet as health promoters.

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1. Tulipani S, Mezzetti B, Capocasa F, et al. Journal of Agricultural and Food Chemistry, 2008, 56, 696-704.
2. Schulz M, Chim JF. Food Bioscience, 2019, 31, 100438.