

EVALUATION OF TOTAL POLYPHENOL AND FLAVONOID CONTENT OF MALT FLOUR EXTRACTS AND ANALYSIS OF THEIR EFFECTS ON THE VIABILITY OF *DROSOPHILA* S2 CELLS

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Increasing attempts to utilize malt flours in the food industry have been made in recent years because of their biological as well as antioxidants properties. In this study, a hot water extraction method was applied to obtain extracts that were further used to determine the Total Flavonoid Content (TFC) and Total Polyphenol Content (TPC). Since the antioxidants and particularly flavonoids, have the capacity to regulate several cellular activities in a dose dependent manner; we set to analyze the viability of *Drosophila Schneider 2* (S2) cells by assessing seven different malt flour extracts and each of them at five different concentrations (200 μ L, 100 μ L, 50 μ L, 25 μ L, 12.5 μ L) at the 3rd and 7th day of the administration period. Previous studies showed that the duration of germination and roasting might affect the TPC and TFC content which would be paralleled by the antioxidant capacity of malt flours. The assessed malt flours showed the TPC to vary in between 451.67 \pm 0.58 mgCE/100g and 20.00 \pm 2.00 mg/100g. Moreover, the TFC ranged from 73.770 \pm 66 mgCE/100g to 9.370 \pm 73 mgCE/100g. The TPC and TFC data are indicating that our malt flours polyphenol content is heavily influenced by the nature of the utilized raw materials and fabrication technologies. The *Drosophila* S2 cells-based viability test indicated a concentration dependent increase in the case of every malt extract on the 3rd day, while at the 7th day, the viability seemed to decrease. All our observations are suggesting that the analyzed malt flours represent raw materials with high nutritive values, and as a consequence they can be used for the fortification of newly developed foodstuff.