Abstract No. 14

PaperTitle # The Total Phenol Content and Antioxidant Activity of South African Wheat Flours

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ABSTRACT

Recent studies have indicated that grains, including wheat, are a major source of antioxidants in our diets. This has lead to research focused on wheat phenolics and their antioxidant activity. This research aims to determine the total phenol content (TPC) and antioxidant activity of South African wheat varieties. The research will also look at how milling extraction rate influences the TPC and antioxidant activity. This is because phenolic compounds are known to be highly concentrated in the bran.

TPC was determined using the Folin-Ciocalteu method and Trolox equivalent antioxidant capacity (TEAC) was determined using 2,2´-diphenyl-1-picrylhydrazyl radical (ABTS+). Four South African wheats milled into white bread flour, brown bread flour and whole grain flour were analyzed and compared to three similarly treated international wheats: Australian, Canadian and United States' Dark Northern Spring. The TPC and TEAC of the flours ranged from 0.075-0.136 g GAE/100g and 5.72-7.37 µM Trolox eq/g, respectively. There was no statistically significant difference between South African wheat flours and any of the other wheat samples. These values are within ranges of other cereals such as oats, maize and sorghum. The research also indicates that level of TPC and TEAC increases with increase in extraction rates. A general trend is observed where wheats with higher TPC values also have a higher TEAC.

The results indicate that South African wheats are similar to international wheats in terms of their TPC and TEAC.

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