

**Title** Efficiency of abrasive dehulling to produce wheat grain fractions enriched in antioxidants  
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### **Abstract**

The main objective of this study was to examine the efficiency of the tangential abrasive dehulling method to produce wheat fractions enriched in health beneficial bioactive compounds. Nine wheat fractions obtained by using a tangential abrasive dehulling device (TADD) at three different abrasion time and grain moisture levels were analyzed for their chemical composition. Aleurone, bran and whole wheat were also examined as references. Antioxidant capacity of the extracts obtained from the samples was evaluated by using ORAC, TPC and DPPH assay. Tocols, carotenoids, phenolic acids and organic acids content and compositions were determined by using various HPLC methods. Total policosanol and phytosterol content together with composition in whole wheat grain were determined by GC-FID. Protein, ash, starch, lipids, TADD yield, extraction yield and mineral content were also analyzed. The correlations between bioactive compounds and the antioxidant capacity of the extracts were derived. Most TADD samples showed stronger antioxidant capacity and greater bioactive compounds content than that of the bran and whole wheat samples. We were able to obtain wheat fractions that contained higher amount of bioactive compounds than the commercial aleurone product. Both moisture and abrasive time had significant effect on the antioxidant capacity of the samples. Shorter abrasive time and moderate grain moisture content resulted in fractions enriched in bioactive compounds. Ferulic acid played the most important role in the ORAC and DPPH assays. The results indicated that TADD is an efficient method to enrich bioactive compounds in wheat fractions.