

362. ANTIOXIDANT ACTIVITY AND TOTAL PHENOLIC CONTENT OF SPROUTED GRAINS

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The sprouted grains like wheat, barley, red lentils, corn, sunflower and buckwheat have attracted much interest in recent years. Polyphenols of cereals are the major bioactive compounds for health benefits, including anti-inflammatory, antiallergic, antithrombotic, antibacterial, antiviral, and vasodilatory actions. According to information in the Medline database, the past ten years have seen a 340% increase in manuscripts mentioning “antioxidants”. Many of the biological functions, such as antiaging, anticarcinogenicity, and antimutagenicity, originate from antioxidant activity.

The purpose of this research paper work is:

- to estimate the average content of polyphenols compounds and their antioxidant activity;
- to establish the significance of sprouted cereals in our day by day diet, to find out the perspectives of their therapeutical use.

Materials and methods. Meta-analysis of scientific information that was published in specialized periodicals. Folin-Ciocalteu reagent was used in determining total phenolics content. Antioxidant activity was determined using DPPH - α , α -diphenyl- β -picrylhydrazyl free radical scavenging method.

Results. Sprouting breaks down starches in grains to simple sugars that are easier to digest. It also produces Vitamin C and increases the Vitamin B content. Enzymes that are produced during sprouting help with the breakdown of the grain in the digestive system. Sprouting neutralizes enzyme inhibitors and phytic acid, a compound that blocks absorption of the minerals, inactivates potent carcinogens present in grains called aflatoxins, it also results in an increase in essential fatty acids and crude fiber content. A key role in all the crucial processes plays their antioxidant capacity and total polyphenolic content.

Conclusion. The sprouted grains are the major source of polyphenols with antioxidant capacity. As already mentioned, antioxidants have significant potential health benefits; they may protect cell constituents against oxidative damage and therefore limit the risk of various degenerative diseases Associated to oxidative stress such as cancer, cardiovascular disease and osteoporosis. Besides, sprouted cereals extract could be used in food as an additive, i.e as a source of natural antioxidants in order to replace the synthetic ones. Thus, sprouted cereals, due to the low cost and easy availability, can serve as good substrates offering significantly nutritional dietary supplements and bioactive compounds, and had a tremendous potential in food and pharmaceutical industry.

Keywords: sprouted grains, antioxidants, polyphenols, health benefits, nutritional dietary supplements.