عنوان مقاله:

Comparison bioactive soluble polysaccharides in wheat, reye and triticale

محل انتشار:

سومین کنگره بین المللی و بیست و ششمین کنگره ملی علوم و صنایع غذایی ایران (سال: 1398)

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خلاصه مقاله:

Nowadays, increasing consumer demand for healthy foods has driven food industry toward functional foods., Bioactive components are non-digestible or low digestible food ingredients which selectively stimulate the growth of the limited number of species of gut microbiota. Two groups of these components are oligosaccharides and polysaccharides, which are resistant to gastric acidity and hydrolysis by enzyme, fermented by intestinal microflora and selectively stimulate the growth of intestinal bacteria. The water-soluble polysaccharide (WEP) exists in cereal bran. WEP compose part of soluble dietary fiber, which makes up to 30% of total sugar of cereal bran. The dietary fiber content in rye, triticale and wheat is 15-21%, 13-13% and 11-14%, respectively. This can be attributed to the higher amount of cell wall polysaccharides being an essential part of the dietary fiber composite. Triticale contains a much higher content of lignin and cellulose compared to the remaining sample. Wheat bran has the highest content of minerals and triticale has the lowest amount of minerals. Wheat bran possesses the highest percent of arabinose and xylose and rye has the lowest amount of this monosaccharide. Polysaccharides were categorized as, very low (≤4400 Da), low (4400-9900 Da), medium (21400-43500 Da), high (124000-401000 Da) and very high (≥401000 Da). WEP of triticale has shown the widest distribution of molecular weight. While wheat and rye had medium molecular weight. High molecular weight polysaccharides are influenced grain hardness because of their ability of form a stable gel network thus stiffness of cell walls. Triticale has both high quality and quantity characteristics of wheat and resistance to biotic stress of rye parent. In addition, high molecular weight polysaccharides may have more antioxidant potential.

کلمات کلیدی:

Bioactive polysaccharide, Wheal, Rye, Triticale