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## Beta-glucan enrichment of bisquits

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Beta-glucan a water-soluble fiber consists of a linear polymer of D-glucose linked via the ß-1,3 glycosidic bonds, in addition to the ß-1,4 and/or ß-1,6 bonds. Several studies have shown that beta-glucan blunts the glycemic and insulin response and inhibits hepatic cholesterol syntheses. In addition it has good foaming properties increases viscosity, emulsifies well and has good water binding properties. Aim of present study was to investigate the effect of malting process and biscuit production technology on the beta-glucan content of various cereals such as oat, barley and emmet. Bisquits were produced according a modified recipe of AACC 10-50D method using flour blends. Flour blend were prepared of wheat flour with 25, 50 and 75% malted and ground barley, oat and emmet flour, respectively. Beta-glucan content of the flours and of bisquits was determined using Megazyme (Mixed-Linkage Beta-Glucan) enzyme kit. In case of bisquits, color measurements and dry matter measurements were also performed.
Results indicated that oat had the highest beta-glucan content (3.23 g / 100 g) followed by barley (2.64 g / 100 g), and rye (1.40 g / 100 g). Malting affected the color of the product, as it was darker and browner with increasing amount of malt. It was obserced that malting decreased the beta glucan content of cereals. Bisquit preparation further decreased dietary fiber content: 1% beta-glucan was found in the final product. It can be concluded that processing technologies have a strong effect on beta-glucan content of cereals.

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## Membrane separation for a treatment of beer brewing wastewater

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Brewing industry consumes a high amount of groundwater that must be disposed in order to facilitate its release to the environment. This wastewater is generated among others by tank washing after malting or brewing, bottle rinsing, and often characterized by high organic load due leftover by-products such as spent grains and yeast surplus. Membrane filtration is used in this work to treat wastewater because its low cost and ease of operation. A rinsing water of the brewing room was filtered with microfiltration (MF) and then reverse osmosis (RO) flat membrane modules. Water sample was pretreated with MF in order to remove yeasts, solid wastes and suspended particles and decrease turbidity of wastewater. Then the water was treated by RO membrane, which is capable to reject ethanol sugar and soluble starch. As a result, a significant reduction of chemical oxygen demand (COD) could be achieved.