

September 10-11, 2018
Prague, Czech RepublicE I Benítez et al., J Food Nutr Popul Health 2018 Volume: 2
DOI: 10.21767/2577-0586-C3-008

DEVELOPMENT OF FOODS FROM WHOLE GRAINS AND THEIR HEALTH BENEFITS

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In the quest for a better quality of life, preparation of foods with flour from whole grain cereals have great benefits, not only for its contribution in fibers but also for its greater availability of proteins and phytonutrients. The case of sorghum is presented, with a high content of tannins, which through hydrothermal processing is able to increase the bioavailability of proteins, achieving a food rich in nutrients and also suitable for people with celiac disease. Likewise, it has an additional benefit for diabetic people due to the presence of residual tannins that could attenuate hyperglycemia due to its interaction with digestive amylases. Tannins belong to the family of compounds known as polyphenols, possess an interesting antioxidant capacity and act as modulators of heart disease. However, in the preparation of foods, tannins lead to problems of non-acceptance because the flour derived from milling has a brownish coloration. The treatment consists of a steeping and annealing, with appropriate conditions of humidity and temperature. The annealing consists of a solid-liquid extraction, using water as solvent. In general, the treatment improves the structure of flour allowing a better grinding of the grain and a greater hydration of the starch granules. The conditioning process involves temperatures between 55 and 75°C and times between 2 and 4 h, being especially useful to remove possible biological contaminants such as fungi or their toxins that could be transferred to the flour. On the other hand the subsequent washing is necessary since it will allow the elimination of possible cross contamination that can affect the grain during transport of cereal. Avoiding cross contamination is a key point in the elaboration of foods for the celiac. Subsequently, grinding must be done at an optimum humidity. The treatment not only increases the availability of proteins but also improves the water retention capacity and the flour pasting properties. This work presents some advantages in the treatment of reducing tannins and their benefits in food processing.

Biography

E I Benítez has completed her PhD in Chemical Engineering in 2007 from Universidad Nacional del Sur and Postdoctoral studies from Universidad Nacional del Nordeste in Argentina. Since 2010, she has been professional qualification of Specialist in Food Technology. She is a Member of Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) in Instituto de Química Básica y Aplicada del Nordeste (IQUIBA) and a Research Professor of Biotechnology from Facultad Regional Resistencia- Universidad Tecnológica Nacional. She has published more than 20 papers in reputed journals of food and nutritional technology and has been evaluator of scientific publications of recognized reputation.

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