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Barley Products - An Overview

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ABSTRACT

Barley is a temperate zone crop. It is considered as an ancient crop grown for a very long time period by human beings. For a very long time period, it has been utilized for many purposes that include fodder, forage and is used for making beers and beverages by the process of fermentation. Barley products will be discussed in this overview. Many nutritive products are made from Barley crop. Barley flour is used to make biscuits and breads. Its water is used to make distilled beverages and beer (by fermentation). So, finally we can say that barley is a healthy and nutritive crop whose products and by-products come into markets for the consumption of humans as well as animals.

Keywords: *Barley, Products, Uses, Nutritive value, Health advantages.*

INTRODUCTION

Barley (*Hordeum vulgare* L.) is an ancient cultivated grain crop which ranks at fourth position among cereal crops. It is cultivated at worldwide (Ajgaonker et al., 1972). Now, the theory is that the barley domestication was started at first in the Fertile Crescent zone of the near east. Then, it spread over the Syria, Iran, Iraq and Turkey. *Hordeum spontaneum* C. Koch is considered as progenitor of today's present barley (Arandt et al., 2006). In very ancient review of literature, there is existence of the usage of barley in the process of beer and beverages by fermentation. It is called as "poor man's bread". The β-glucan is a very important fibre which is present in the grains of barley which has very potential health benefits for a person who is suffering from lack of dietary fibres (Bae et al., 1997). So, by the barley grains flour many other new eatable things can be made. The β-glucan fibre has highly nutritive value for the humans as utilization of this lowers the plasma cholesterol levels, improves lipids metabolism and reduces glycemic indexes. The United States of American food institutes say that barley reduces the heart diseases like coronary arteries problems and heart attacks as well as heart failures (Behall et al., 2004).

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So, now the industries are struggling very hard to produce such by-products from barley which are highly enriched with β-glucan and other carbohydrates as well as with minerals. Only few investigations showed negative effects of barley ingredients (Birgitta et al., 1994). Now, we discuss the different types of barley products.

Kinds of the Barley Products

Biscuits

Biscuits are normally not made from the barley flour but are made from the wheat flour. Because there is a lack of knowledge about the health benefits of barley flour. By composition, barley is very rich in nutrients like β-glucan and iron (Bourden et al., 1999). There is also low availability of the barley production due to this there is lack of utilization of barley flour for the biscuits industries. But when for investigations, biscuits from barley flour and wheat flour were made and consumed by humans there were really amazing effects of barley flour biscuits as a comparison between wheat flour biscuits and barley flour biscuits (Davidson, 1999).

Now, the researchers are trying their best to make such biscuits which are from barley flour and are highly rich in β-glucan as this ingredient highly improves the human health and has well heart saving power and boosts up the energy level in people (Fedek et al., 2007).

Breads

Bread making is very common and oldest practice which is done by barley flour. Breads are eaten with different dishes. Earlier, the barley bread was consumed at a high ratio as compared to rice, wheat and maize but with the passage of time and modernization of human civilization the ratio of usage of barley flour bread reduced (Harlan, 1979).

Barley Water

Normally, water is added to the barley grains and the whole mixture of grains and barley is boiled at high temperature (Juvonen et al., 2009). After cooling the mixture, the water is collected from the mixture which is called barley water. Japanese tea is also made from the barley water by boiling it between 151 degree and 285 degree Celsius temperature. Every barley extracted sample was tested in laboratory for the positive health effects of it and its benefits in anti-oxidant activity and different chemical residues effects (Kaplan et al., 2002).

In Japan, the barley tea taking practice and trend is very common during summer as well as in winter. This tea is totally non-caffeinated and non-tannic. It is rich in beta-glucan.

Other By-Products

Murri

Murri is an ancient dish made from barley flour. It is highly rich in energy and it was first adopted by the Arab civilization (Kent et al., 1994). In this, they put the unleavened and non-seasonal barley dough in to the closed boxes and leave them to rot for 45 days because they do this for the happening of fermentation process. This dough is then ground after drying and mixed with salts, wheat flour and spices to eat. If, it is mixed with milk, then it is called kamakh (Kremezi, 1997).

Krimnitas

This is also a dish which was used from ancient times. A best barley cultivar flour was converted into dough and were rounded in dough in a circle to pound earlier to bake. This is called Krimnitas (Lazaridou et al., 2007).

Paximedia

This is a Greek food item in which double baked barley flour biscuit is made and soaked into the broth before eating. This is called Paximedia dish (Li et al., 2003).

Buza and Ini

A hull-less barley cultivar was taken and its kernels were dried and were store in a large earthenware containers. These kernels were ground and the paste was used by mixing flour with different ingredients. We can store it even for months. Then, salts and spices are added and roll is made. This is ready for eating (Nevo et al., 1992).

Buza is a beverage which is made from 4% alcohol and fermented barley cakes and with malts (Newman et al., 2006).

Barley Tea

Barley tea is also a by-product of barley crop. It has a great history. It was used in Asia and even now it is also taken in China, Korea, India and Japan. Barley tea is made up of roasted kernels which are soaked into hot or cold drinks and are drunk as a water with or without meals. It is very tasty in flavor and highly nutritive for humans. This may be taken as in hot or cold form as well (Harlan et al., 1979).

CONCLUSION

It is concluded from the above discussion that barley has high nutritional value. It is very rich in beta-glucan, proteins, minerals and fibres. Many products are made from the barley which include breads, biscuits, ini, buza, tea and many other ones. The products from barley are rich in anti-oxidants which stops the chances of heart diseases especially coronary problems and reduces the weight too.

Future Aspects

We hope that in future barley cultivation will be enhanced by the farming communities and governments will try their best to spread the knowledge about benefits of barley flour and by-products.

REFERENCES

Ajgaonker, S. S. (1972). Diabetes mellitus as seen in the ancient Ayurvedic medicine. In Insulin and Metabolism. *J. S. Bajaj, ed. Association of India, Bombay*. *2*, 13-20.

Arndt, E. A. (2006). Whole-grain barley for today's health and wellness needs. *CFW Res*. *51*, 20.

Bae, S. H. (1972). Barley breeding in Korea. Proc. Joint Barley Utilization Semin. Korea Science and Engineering Foundation, *Suweon*, *4*, 40-45.

Behall, K. M., Scholfield, D. J., & Hallfrisch, (2004). J: Lipids significantly reduced by diets containing barley in moderately hyper-cholesterolemic men. *J Am CollNutr*. *23*, 55–62.

Bourdon, I., Yokoyama, W., Davis, P., Hudson, C., Backus, R., Richter, C., Knuckles, B., & Schneeman, B. O. (1999). Postprandial lipid, glucose,insulin, and cholecystokinin responses in men fed barley pasta enriched with betaglucan. *Am J Clin Nutr*. *69*, 55–63.

Davidson, A. (1999). The Oxford Companion to Food. Oxford University Press, Oxford.

Fedak, G. (1992). Inter-generic hybrids with Hordeum. Barley: Genetics, Biochemistry, Molecular Biology and Biotechnology. P. R Shewry ed. CAB International, *Wallingford, England. 2*, 45-70.

Harlan, J. R. (1979). On the origin of barley. in: Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests. USDA Agric. *Handb. No*: *338*, 300-315.

Harlan, J. R., & Zohary, D. (1966). Distribution of wild wheats and barley. *Science*, *153*, 1074.

Juvonen, K. R., Purhonen, A. K., SalmenkallioMarttila, M., La¨hteenma ¨ki, L., Laaksonen, D. E., Herzig, K. H., Uusitupa, M. I., Poutanen, K. S., & Karhunen, L. J. (2009). Viscosity of oat bran–enriched beverages influences Gastrointestinal hormonal responses in healthy humans. *J Nutr*, *139*, 461–466.

Kaplan, R. J., & Greenwood, C. E. (2002). Influence of dietary carbohydrates and glycaemic response on subjective appetite and food intake in healthy elders persons. *Int J Food Sci Nutr*, *53*, 305–316.

Kent, N. L., & Evers, A. D. (2004). Kent's Technology of Cereals 4th ed. Elsevier Science Ltd., Oxford.

Kremezi, A., Paximadia, (1997). (barley biscuits): Food for sailors, travellers, and poor islanders. In: Food on the Move: Proc. Oxford Symp. Food Cookery. H. Walker, ed. Prospect Books, Devon, England.

Lazaridou, A., & Biliaderis, C. G. (2007). Molecular aspects of cereal β -glucan

functionality: physical properties, technological applications and physiological effects. *J Cereal Sci*. *46*, 101–108.

Li, J., Kaneko, T., Qin, L. Q., Wang, J., & Wang. Y. (2003). Effects of barley intake on glucose tolerance, lipid metabolism, and bowel function in women. *Nutrition*, *19*, 926–929.

Nevo, E. (1992). Origin, evolution, population genetics and resources for breeding of wild barley, Hordeum spontaneum, in the Fertile Crescent. Barley: Genetics, Biochemistry, Molecular Biology and Biotechnology. P. R. Shewry, ed. CAB International, *Wallingford, England*. *2*, 19-43.

Newman, C. W., & Newman, R. K. (Jan-Feb-2006). Newman Associates Inc. Bozeman, M. T. A Brief History of Barley Foods. *Cereal Foods World*, *51*(1), Percival, J. The Wheat Plant. Duckworth Publishers, London.