Global Nutrition and Dietetics

Research Article

To Develop and Evaluate the Nutritional Composition of Baby Powder Made From Man-Made Cereal (Triticale)

This article was published in the following Scient Open Access Journal:
Global Nutrition and Dietetics
Received March 07, 2019; **Accepted** March 26, 2019; **Published** April 02, 2019

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Abstract

Triticale (*Triticosecale* Wittmack) is the first cereal of an agricultural crop that is produced scientifically by human & used for both purposes as human food and& livestock feed with; that has lots of health benefits. The present study was focused on development of product i.e., baby powder using triticale, by varying the levels of triticale at the incorporation of 20%, 25% & 30%. The product was subjected to sensory evaluation, Baby powder with 30% triticale was found to be best accepted with scores of 9.0, 8.8, 8.8, 9.0 and 9.0 for appearance, texture, colour, flavour and overall acceptability. The proximate composition of the third treatment was found to contain 10.22, 1.76 gm, 13.18 gm, and 1.20 gm percent of moisture, ash, protein and iron respectively.

Introduction

Cereals can be defined as a grain or edible seed of the grass family, Graminae [1] Cereals are grown for their highly nutritious edible seeds which are referred to as grain. Cereals have been staple foods both for human consumption and livestock feed. Cereals are the most important source of food [2]. Triticale (*Triticosecale* Wittmack) was the first reported cereal grain to be intentionally produced and developed in 1875 by crossing female parent wheat (*Triticum aestivum* L.) with male parent rye (*Secale cereal* L.) (Reference). Triticale was developed to merge the positive attributes to both parents into a single plant namely the utility of wheat in food products and the tolerance of rye to non-optimal growing environments. The approximate chemical composition of triticale grain resembles that wheat more than rye. Triticale grains can be used for human food and livestock feed. Since, the last century, triticale has received significant attention as a potential energy crop. Triticale is an attractive option for increasing global food production particularly for marginal and stress prone growing conditions. The first area of interest of triticale for use as a feed grain because it has proven to be a good source of protein, amino acids and vitamins also minimum gluten as well good sensory properties. The protein content of triticale lines has ranged from 10% to 20% on a dry weight basis. The second area of interest for triticale grain is in developing countries, it as a food grain cereal that would exhibit unique baking traits. As a food grain, triticale has also been recognized as a hardy crop capable of helping combat world hunger. Triticale has potential in the production of bread and other food products such as pasta and breakfast cereals [3]. The protein content is higher than that of wheat although the gluten in fraction is less. Triticale can be milled into flour using standard wheat or rye flour milling procedures. Triticale cultivars possessing improved grain shape and plumpness produce flour yields equal or closer to those of wheat [4] . Triticale is important as rotation crop for the reduction of soil pests. Triticale can act as a soil improver, as its extensive root system binds erosion prove soil and provides a good substrate for conversion into subsoil organic carbon by soil microbes. [5, 6] discussed the importance of the high dietary fiber in triticale. High fiber content in food helps regulate blood glucose which is an advantage for individuals who are diabetic. Insoluble fiber assists in maintaining colon health and soluble fiber assist in reducing glucose release and absorption, there by controlling blood cholesterol.

The objectives of this research was were to develop products from manmade cereal triticale and to evaluate the nutritional composition of developed products from triticale.

Material and Methods

Materials: Triticale grain was provided by Hisar University, Haryana farmer and

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Pearl millets and Wheat, Wheat and pearl millet , sugar and cardamom were purchased from local market of Kanpur, Uttar Pradesh. The study was carried out at the scientific laboratories of the Faculty of Food Science and Nutrition department and, soil sscience Department of Chandra Shekhar Azad University of Agriculture and Technology kanpur INDIA.

Methods: The ingredients were cleaned and stored for further research. All three grains were cleaned, washed and sundried for 2 days. After the drying process, all the three grains are roasted in a pan separately and the grounded them into flour. New, mix all three flour in given proportions and add other ingredients like-sugar and cardamom powder, that is procured from local market were used in study. A baby powder was standardized using the ingredients such as triticale flour, wheat and pearl millet flour, and sugar and cardamom powder. These variations were tried by changing the proportion of ingredients.

Sensory Evaluation

The prepared nutritious powder from different variations was organoleptically evaluated for sensory characteristics by trained 5 panel members for its acceptability using nine point hedonic scale (reference?). The attributes selected were grouped under modalities such as colour, texture, appearance, flavour and overall acceptability sensory evaluation was conducted under sensory evaluation was conducted under fluorescent light, with the booth area maintained at 24 degree temperature) .

Determination of Proximate Composition

Moisture was determined by oven drying method of AOAC (ii) Protein content of baby powder was determined by micro-Kjeldhal method, ash by combustion. Total iron was analyzed by atomic absorption spectroscopy.

Statistical Analysis

The data were subjected to analysis of variance (ANOVA) test. The score given for all the sensory attributes such as colour, texture, flavour, appearance and overall acceptability for each sample were tabulated. The score of proximate analysis (moisture, ash, protein and iron) were also tabulated.

Result and Discussion

Three variations of prepared powder were evaluated for nutrient composition and sensory evaluation.

Sensory Evaluation

The results pertaining to the sensory evaluation of baby powder from different variations presented in (Table 1). Among these variations, Treatment III containing 30% triticale was found to be best accepted with the score of 9.0, 8.8, 8.8, 9.0 and 90 for appearance, texture, colour, flavour and overall acceptability

Table 1: Mean score of sensory quality of baby powder.

Parameters	Sensory Evaluation				
Treatments	Appearance	Texture	Colour	Flavour	Overall acceptability
T_1 (20%)	7.0	6.8	6.2	6.0	6.6
T_2 (25%)	8.4	8.0	7.8	7.8	8.2
T_3 (30%)	9.0	8.8	8.8	9.0	9.0

Table 2: Mean score of nutrient analysis of baby powder.

Parameters	Sensory Evaluation			
Treatments	Moisture	Ash	Protein	Iron
T_1 (20%)	10.52	1.16	13.20	0.550
T_2 (25%)	10.37	1.71	13.19	1.14
T_3 (30%)	10.22	1.76	13.18	1.20

least scores were observed for baby powder by incorporating 20% triticale that is treatment first.

Nutritive Value

Nutritive value of the three variations of baby powder is given in (Table 2) in which moisture, ash, protein and iron content was found. Moisture content was found high in Treatment I (10.55) and least in Treatment 1 (10.22). While ash content was higher in Treatment III (1.76 gm) than the other two treatments (1.71 and 1.16 gm). There was no significant difference in protein content as it was found 13.20, 13.19, and 13.18 gm in the three treatments, respectively. Iron content was found high in Treatment III (1.20) and least in Treatment I (0.55).

Conclusion

Triticale can be used to develop various products with the incorporation with wheat for the preparation of various products.

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