

Safety evaluation of gluten-free diet-related foods and beverages

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ABSTRACT

People with food allergies and celiac disease may be at risk from naturally gluten-free foods and processed goods that don't disclose whether or not they may contain gluten. The majority of patients who need to adhere to a rigorous gluten-free diet don't. Therefore, the objective of this study was to evaluate the gluten protein level of naturally and verified "gluten-free" items that are not labelled with the warning "may contain gluten." The study was conducted using the enzyme immunoassay Agra Quant Gluten G12 ELISA test kit. The total goods used in the study had gluten levels over. Only one "gluten-

free" product had gluten contamination (cider cake). In addition, our study looked at the gluten level of commercial beers made with barley malt but not those with the "gluten-free" label. According to research, of samples are unsafe for people following a rigorous gluten-free diet. Our study unequivocally demonstrates that many manufacturers produce safe items, despite they cannot be advised on a gluten-free diet, even though they do not check their products for the presence of gluten. Therefore, it is imperative that food producers test their goods more often for the presence of gluten so that there are more items available for those following a gluten-free diet.

Key Words: *Food Safety; Microbiology; Protein fibre.*

INTRODUCTION

According to the Food and Agriculture Organization of the United Nations, access to nutritious food is the cornerstone of food security. Food safety and quality must be monitored throughout the whole production process, from the farmer to the consumer. This ensures that the items will meet the necessary standards for health. Willem Karl Dicke originally proposed the Gluten-Free Diet (GFD). It is a particular diet that forbids foods containing the proteins found in wheat, rye, and barley. This diet advises consuming unprocessed, naturally gluten-free foods such fruits, vegetables, meat, eggs, and fish, as well as those that have been "gluten-free" verified. Gliadin, secalin, and barley are all types of grains that contain gluten (hordein). The immunogenic fractions of gluten proteins are gliadins and glutenins. It should be mentioned that, according to the Codex Alimentarius, a product can be labelled "gluten-free" when it contains less than of gluten and "ultralow-gluten" when it contains less than ppm of gluten. Gluten occurs naturally in some ingredients used in food production, and it is also added to food for its technological properties. Additionally, those following this diet should pay particular attention to processed foods that may contain traces of gluten due to cross-contamination. The presence of gluten proteins in naturally gluten-free foods is possible for two reasons. Usage of items made from wheat, rye, or barley that is intentional. Cross-contamination, which seems to be the biggest concern, is the second justification. In recent years, there has been a steady rise in the consumption of gluten-free or naturally gluten-free foods.

Global market data, citing Fajrado, predicts that sales of GF products would increase at a compound annual growth rate. This is a result of a variety of illnesses in which proteins from wheat, barley, and/or rye are essential. Currently, Celiac Disease (CD), Non-Celiac Gluten Sensitivity (NCGS), and wheat allergy (WA) are the three disorders that call for GFD. Furthermore, the cutaneous symptom of celiac disease, dermatitis herpetiformis, also known as Dühring's disease, is of special significance. This is brought on by sensitivity to gluten. Between and per persons in the United States and Europe are affected by DH, which has an annual incidence ranging from toper people. Although of the general population suffers from gluten-related illnesses (GRDs), gluten-free goods are also favoured, viewed as healthier, and eaten by those who do not exhibit any signs of gluten disorders. According to published studies, however, gluten-free diets are more high in saturated fat, carbs, and salt than gluten-containing goods, and they are low in many critical elements including protein, fibre, vitamins, and minerals. In CD patients, these traits seem to favour the emergence of metabolic disorders. The last drawback of a gluten-free diet. The prevalence of CD, the most well-known autoimmune gluten-related illness, is rising by globally. NCGS without CD is also an immunological response to fructans, amylase trypsin inhibitors, and gluten. Furthermore, those with an IgE-dependent WA are advised against consuming wheat. It is advised to follow the GFD, nonetheless, due to issues with the accessibility of several food groups (bread). Exercise-dependent anaphylaxis induced by wheat, or WDEIA, has received attention

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recently. It is an allergic reaction brought on by eating wheat proteins. Keep in mind that exercise-induced anaphylaxis can persist for following gluten ingestion.

CONCLUSION

Previous studies have demonstrated that the majority of randomly chosen items are gluten-free and could be readily labelled as such, but this is not the case. Our study unequivocally demonstrates that many manufacturers provide safe products even when they do not check for the presence of gluten in their products. It should be highlighted, nonetheless, that because product labels do not specify whether they

are "gluten-free," they cannot be advised for persons with celiac disease because, depending on the batch of the product, cross-contamination in the manufacturing facility may occur. As a result, there is a critical need to increase the frequency with which food producers test their goods for the presence of gluten. So that there are more goods available for those following a gluten-free diet. In order to enhance the availability of certified items that are safe for persons on a gluten-free diet, it is also required to raise the frequency of regular checking of food for the presence of gluten by manufacturers and to provide consumers with trustworthy information regarding gluten content