

Measuring Gluten in the Food Chain

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Celiac Disease is an autoimmune disorder that produces symptoms when gluten is consumed. Symptoms that occur when a patient has Celiac Disease include extreme headaches, bloating, anxiety, constipation, nausea, weight loss, joint pain, and infertility. Gluten is a protein that is primarily found in grains such as wheat, rye, barley, and malt. Measuring the gluten content in food items and beverages is vital to those who have Celiac Disease or have gluten sensitivities in order to stop the reaction that occurs when gluten is consumed.

There are various methods used in order to detect the gluten protein, as well as the different wheat strains in a given sample. To measure the total amount of gluten protein in breadcrumbs, multiple analyses used in food industry and clinical research are used, including the Bradford assay, the Lateral Flow assay, the R5 BioPharm enzyme-linked immunosorbent assay (ELISA), the Kjeldahl method, and the Dumas method. The Kjeldahl and Dumas methods were performed in an outside laboratory, while the three other techniques were performed in house. The protein content recorded from each method was then compared to one another and used to estimate the amount of gluten in the breadcrumb samples. By conducting this research, the results from the five different techniques allowed for a better understanding of the correlation between the specificity of the methods and which is method is best suited for testing certain food items.

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