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Resistant starch content of selected Australian foods

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A growing body of research has identified interactions between microorganisms and nutrients within the gut, collectively referred to as the 'gut microbiome'[(1)]. Alongside this, distinct structural characteristics/components of dietary fibre have been recognised to exhibit various physiological effects on the body[(1)]. These inherent physiological properties have the potential to result in diverse health benefits through the consumption of resistant starch, a specific form of dietary fibre[(2)]. It is important to note that the laboratory-based techniques employed to assess resistant starch content from current Australian dietary composition data are antiquated and have not been conducted using updated testing methods[(3)]. Results from updated testing methods may contribute to and inform nutritional recommendations to support and improve health outcomes. To assess the resistant starch content of starch-containing Australian foods using the updated Association of Analytical Chemists (AOAC) 2002.02 testing methods approved by Food Standards Australia New Zealand[(3)]. Standardised kits (K-RSTAR) and control flours were used for assaying. Forty commonly consumed and available Australian foods were tested in duplicate for their resistant starch content. Calculated resistant starch values (in grams) were recorded using calculation tools provided by Megazyme. Means, standard deviations, and coefficient of variations between duplicate samples were recorded in a Microsoft Excel spreadsheet. The resistant starch content of foods varied from 0-13.72g/100g for rice crackers, beetroot, and hi-maize pancakes, respectively. Foods with the highest resistant starch were hi-maize flour pancakes, red kidney beans, Lebanese bread, and Cornflakes cereal, which ranged from 2.30-13.72g/100g. The lowest resistant starch foods included beetroot, rice crackers, All Bran cereal, and Nutri-grain cereal, ranging from 0-0.04g/100g. Changes in the foods' natural chemical, physical, and enzymatic qualities may have led to slight batch variations and deviations from the literature available. This study is the first known Australian study to investigate the resistant starch content of selected Australian foods using the AOAC 2002.02 assay method. This data can be used to assess resistant starch consumption in the Australian population, inform gut microbiome research, and guide clinical practice recommendations for fibre intake.

Keywords: resistant starch; gut microbiome; nutrition; fibre

Ethics Declaration

Yes

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