Development of dumpling rich in barley flour with gluten added

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This study aimed to develop dumplings with high barley content, by the incorporation of less than 10% gluten. To 100 g of barley flour, 5% and 10% gluten, and 50%, 60%, 65%, 70% and 75% water, respectively, were added. The mixture was kneaded, left for 3 hours to allow dough development, cut to form raw barley dumpling skin, and then baked for analysis of color, texture, β-glucan content and total polyphenol content.

Cooked barley dumplings with mincemeat filling were prepared for sensory evaluation. In addition, wheat dumplings were also prepared and examined, for comparison. The barley dumpling skin had significantly lower L* and higher a* when compared with wheat dumpling skin. No significant difference in firmness was observed between baked wheat dumpling skins (2.07 N) and burley dumpling skins with added 10% gluten and 65%, 70% and 75% moisture (1.82–2.28 N). The burley dumpling skin with 10% gluten and 70% moisture, used to prepare the meat dumplings, displayed the closest texture to that of the baked wheat dumpling skin. A higher β-glucan content (2.2% vs. 0.2% dry basis) and total polyphenol content (183.2 vs. 86.4 mg gallic acid equivalents/g dry weight) were provided by baked barley dumpling than the baked wheat dumpling. The sensory test revealed no difference between baked barley and wheat dumplings, except for appearance. The proposed method provides barley dumpling with high functional components and palatability.