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Functional compounds of *Chlorella* hydrolysates fermented by probiotics

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Chlorella, rich in proteins, peptides, chlorophyll, vitamins and minerals, is a good material for the production of functional foods. However, the rigid cell wall cannot be easily digested and release the nutrients, which consequently lowered its nutritional value. To rupture the cell walls, *Chlorella* was hydrolyzed with 10% of cellulase (150 U/g) and 1% of protease (10000 U/g) at 50°C. The hydrolysate was further fermented with *Lactobacillus plantarum* subsp. BCRC 10069 or *Lactobacillus johnsonii* BCRC 17010 at 37°C for 24 hr. The chlorophyll (chlorophyll a+b), anthocyanins and lutein in the samples after 24 hr fermentation by *L. plantarum* subsp. BCRC 10069 or *L. johnsonii* BCRC 17010 increased from 6.18 to 41.58 and 22.93 µg/mL, from 0.291 to 0.779 and 0.808 µmol/g and from 0.284 to 2.107 and 1.398 mg/100 mg, respectively. The total protein content decreased from 213.13 to 128.78 mg/g, while the peptides, free amino acids contains increased from 62.52 to 227.68 and 197.63 mg/g, from 10.19 to 17.91 and 23.65 mg/g, respectively. Essential amino acids increased significantly from 5.04 to 10.88 and 5.17 mg/g. Arginine, aspartic acid, leucine, methionine and phenylalanine also increased significantly after LAB fermentation. These data suggested that hydrolysis and fermentation have high potential to improve the functionality of *Chlorella*.

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Consumer attitude and motivations towards food quality certifications

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Food quality and safety have received growing attention in many developing countries including Vietnam due to several reasons including the overuse and misuse of pesticides in agriculture and the presence of harmful chemicals in food. In the context of these serious problems in the Vietnamese domestic market, it is vital to explore how consumers think and behave towards food certifications. Thus, this study examines consumer attitude towards food quality certifications in the selected urban areas in the South of Vietnam employing face-to-face consumer surveys with 500 respondents. Results showed that consumers' knowledge of food quality terms was relatively low. Less than half of the respondents indicated to know the meaning of sustainability, GAP and organic food. Consumers' familiarity with the food certifications (e.g. GAP, HACCP and organic) was also low. This study focuses on the differences in the consumer perceptions towards rice and vegetables. Regression results showed that consumer attitude towards quality foods was affected by different motivations such as perceived importance of environmental consequences, perceived fairness of prices for farmers, food certification familiarity, perceived importance of healthy eating (in the case of rice), and food safety concern (in the case of vegetables). The food safety aspect of certified vegetables should be emphasized during marketing activities of quality certifications. Furthermore, the awareness and knowledge of consumers towards food quality certifications as well as sustainable agricultural practices should be publicly enhanced.

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