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Process for Producing Brown Rice with Increased Accumulation of GABA Using High-pressure Treatment and Properties of GABA-increased Brown Rice

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Brown rice is commonly considered to have an effect on various diseases including life-style related diseases. Pre-germinated brown rice is characterized by its easier cooking properties and better taste after cooking when compared with normal brown rice. Because of the rich content of gamma-aminobutyric acid (GABA) in brown rice, which can prevent the increase of blood pressure, the market for brown rice is now growing. However, the taste of the cooked pre-germinated brown rice is still unsatisfactory because of the peculiar smell. We performed a study aimed at establishing a processing method for obtaining a brown rice product with more GABA accumulation than in the commercially available brown rice products by introducing a high-pressure treatment. The result was that the content of GABA in the obtained brown rice is higher than that in the commercially available brown rice products and the functional components such as ferulic acids and oryzanol are also retained. Further, such brown rice with increased GABA accumulation was found to be digested more quickly than the commercially available brown rice products when those cooked rice products were evaluated by the artificial digestion method. The GABA-increased brown rice was also found to compare favorably with commercially available normal brown rice in terms of taste after cooking.

Key words: GABA, brown rice, high-pressure treatment