EFFECT OF SOAKING AND GERMINATING CONDITIONS ON γ-AMINOBUTYRIC ACID (GABA) CONTENT IN TAM HAI HAU GERMINATED BROWN RICE

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Summary
Germinated brown rice with high GABA levels is increasingly interested because the nutritional value of brown rice is kept intact by removing only the outermost layer and making a lot of small easily digestible molecular compounds during the process of incubation. In this study, some variation of Tam Hai Hau brown rice is monitored when soaked and incubated at different conditions. The process of soaking is carried out at 25, 30, 35, 40°C until the grains reach saturated humidity and then they are incubated at 35°C for 24 h; selecting the best soaking mode is based on the highest germinated rate. GABA levels are determined when the incubation is at 25, 30, 35, 40°C. The samples are incubated at the saturated moisture. The results indicates that brown rice is soaked at 35°C in 1.5 hours and then incubated at 35°C for 24 hours generate GABA levels 7 times higher than the initial grains (from 2.21 mg /100 g to 15.82 mg /100 g dry matter). Soaking time of brown rice decreases by 16 times compared to traditional method from 24 hours down to 1.5 hours. Protein, glucid content increase respectively 1.5 times (from 7.67 g/100 g to 12.08 g/100 g) and 2.14 times (from 2.22 g/100 g to 4.75 g/100 g) compared to the original raw material. This result illustrates that germinated brown rice has the potential to become functional foods substitute for common white rice to bring beneficial for human health.

Keywords: GABA, germinated brown rice (GBR), germination condition, soaking temperature, incubation condition.