EFFECT OF STEEPING CONDITION, INCUBATION REGIME ON GERMINATOR AND DRYING AT PILOT SCALE TO GABA CONTENT OF MOT BUI DO RICE VARIETY

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Summary

A rice variety Mot Bui Do (MBD) is identified as one of the salt-tolerant rice varieties and rice production prospects in germinated brown rice production. To determine the influence of factors such as levels of glutamic acid, CaCl$_2$ to the process and the ability to germinate soaked in pilot scale, this study was done. In order to do that the brown rice was soaked in various concentration of glutamic acid, CaCl$_2$ independently from 0-1%. Then incubation was done by experiment design CCD (complex design center) style in incubation cabinets with maximize yield of 30 kg/batch with some factors such as temperature from 36°C to 38°C, thickness of granular layer from 0.3 cm to 0.9 cm; incubated with 15-25 container units, 24 hours incubation period. The results showed that the optimal conditions of seed soaking MBD with glutamic acid as 0.6% was the best, GABA levels increased from 49.51 mg/kg when soaked pH 4 was increased by 124.12 mg/kg dry basic when added glutamic acid 0.6% (2.05 times). In optimal conditions for incubation for germination aof MBD was 37.6°C and 0.92 cm thickness, 28 container units GABA concentrations were as 262.49 mg/kg dry basic. When soaked with different concentrations of CaCl$_2$, resulting in no difference reviews that compared with no additional conditions. The results indicate that only glutamic acid affects the germination process CaCl$_2$ born GABA also not affected. Corelation analysis showed that only the thickness of granular layer was statistically significant non-zero correlations at the 95.0% confidence level to GABA content and germinated ratio as well. With this designed device in this study, incubator temperature is equal to laboratory scale. However, the thickness of the layer and the number of container units greatly affect the ability of GABA biosynthesis in germinated brown rice.

Keywords: complex design center, brown rice, GABA, germination, Mot Bui Do.