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Experimental planning for optimizing the hydrolysis glucomannan from a. Konjac k. Koch plants in vietnam by bacteria bacillus subtilis

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The tubers of *Amorphophallus* sp.- Araceae family have been used as a food source and as a traditional Vietnamese medicine in Vietnam for a long time, but research on cultivation and processing technique has only been paid attentions recently. The Araceae family is represented by around 135 species belonging to 24 genera. Among them, 28 species in 15 genera are traditionally used for medicine, 19 species in 9 genera have ornamental value, and 9 species in 4 genera are processed to eat in the countryside families. These species in Vietnam have potential economic value and should be cultivated for food and pharmaceutical purposes. In order to increase the solubility of glucomannan, the glucomannan hydrolysis to obtain glucomannan with smaller molecular weights attracts the attention of many scientists. With the aim to separate glucozit link in glucomannan obtained from Konjac tubers in Vietnam, we used *Bacillus subtilis* extract. The conditions of the reaction were studied simultaneously with Box-Behnken's second-order experimental model. Design Expert 7.0 software performed ANOVA, surface response methods were used to optimize reaction conditions such as pH, temperature, reaction time, and concentration of E/S. Experimental results showed that the optimum conditions for reaction is at temperature = 38.8 °C, time = 5.8 h, pH = 5.1, E/S = 0.402. The oligo glucomannan obtained after hydrolysis weighs less than 1700Da.

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