

Dadih for Glutamic Acid Production as Precursor of γ -Amino Butyric Acid (GABA) Induced Heat Stress in Broiler

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Abstract : Lactic Acid Bacteria (LAB) is bacteria which has an important role in the process of fermentation of organic matter. *Dadih* is traditional fermented milk product made from the milk of water buffalo. *Dadih* is well known as typical traditional food of West Sumatera (Minang Kabau), Indonesia. This study aims to obtain isolates of Lactic Acid Bacteria (LAB).

producer of glutamic acid as precursor of GABA. The study consisted of three stages: stage 1; isolation of LAB from *Dadih* used of MRS agar contained CaCO₃, 2%. Stage 2 was the selection of glutamic acid-producing LAB qualitatively and quantitatively with inducers of monosodium glutamate (MSG). Stage 3 was the characterization of selected LAB isolates biochemically. The result found that 10 isolates of LAB producing glutamic acid, namely Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8, Y9, Y10. After tested the ability to produce a qualitative glutamic acid of 10 isolates of LAB has capability to produce glutamic acid in the extracellular and intracellular which indicator changed the color to purple used 2% ninhydrin solutions, but after the test quantitatively obtained two isolates (Y2 and Y8) which resulted in the production of glutamic acid, the highest yield of glutamic acid were 41.73 mg/L and 40.86 mg/L, respectively. The characterization of two isolates (Y2 and Y8) was bacilli, convex surface, white milk, and was a gram positive bacteria and aerobic. Based on catalase test and oxidase test showed that isolate Y2 and Y8 was negative catalase and oxidase, but for the glucose, sucrose and mannitol test the two isolates were positives and negatives to lactose test. Based on the characterization, the two isolates were *Lactobacillus* sp. The results of this research, can be concluded that 10 isolates of LAB that isolated from *Dadih* potentially produce glutamic acid, which the highest production was 41.73 mg/L by isolate Y2 (*Lactobacillus* sp) can be as precursor of γ -Amino Butyric Acid (GABA) induced heat stress in broiler.

Keyword : LAB, glutamic acid, *dadih*, MRS agar, GABA.