

ISOLATION AND SELECTION OF NITROGEN FIXING, INDOLE ACETIC ACID PRODUCING BACTERIA FROM SUGARCANE ROOT IN ACID SULFATE SOIL

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Summary

Use of bacteria is one of the most potential methods for sustainable cultivation of sugarcane by reducing the volume of chemical fertilizers. The objective of this research was to select the endophytic bacteria from sugarcane root possessing the ability of nitrogen fixation and IAA production. Six sugarcane root samples grown in acid sulfate soil were collected for isolating bacteria in Phung Hiep district, Hau Giang province. The results showed that 28 strains of endophytic bacteria were isolated from medium NFB, with 24 strains having the ability of resistance to acidity. The selected bacteria of nitrogen fixing function were included strains KC1c, PB3b, KC1f, KC2d and KC1b1, with their concentrations 12.1 – 18.5 mg/L, and chosen strains of IAA synthesis were included HA1e, PB2e and KC1d, with their contents ranging 12.1 – 29.4 mg/L. It is recommended that mixed cultures should be used as plant growth promotors for synergic roles to support sugarcane growth and yield, although they possess both functions.

Keywords: *Acid sulfate soil, endophytic bacteria, nitrogen-fixing, IAA, sugarcane.*