STUDY OF EFFECTS OF PSB TO PADDY GROWTH PERFORMANCE

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ABSTRACT

THE STUDY OF EFFECTS OF PSB TO PADDY GROWTH PERFORMANCE

Oryza sativa L. or commonly known as paddy or rice are the most essential and major grains commodity in the world. It has a very long journey of cultivation history. In paddy field, supplement inputs in harvest creation by roots are vital organ of plant to mineral sustenance. 17 supplements that fundamental for plant development as particle yet the accessible type of supplement in the dirt are constrained. Constrained measure of supplement in the dirt will limit the root development. Objectives of the study are to review on PSB effectiveness and to compare the effects of different PSB to paddy growth performance. The effects of root length and dry matter yield on paddy are compared with three types of phosphate solubilizing bacteria (PSB) between *Bacillus, Pseudomonas* and *Rhizobium*. The result for *Pseudomonas* and *Bacillus* were collected after 45 days and 60 days of sowing and *Rhizobium* is collected after 28 days. *Pseudomonas* gives the highest height with 92.30cm followed by *Bacillus* with 80cm. The plant heights for *Rhizobium* only 26.13cm for 28 days, the possibility of seed to achieve the same height with Pseudomonas is low. In terms of dry matter yield, the highest result shown based on the Table 3 is the Bacillus with 21480mg followed by Pseudomonas with 8780mg and the lowest result is the Rhizobium with only 27.75mg. Application of fertilizer needed in large quantity but nutrients uptake by plant just small in number. Plant growth regulator like PSB can be easily converted to substitute chemical application and this may become the advantages in future generation. The influence of PSB inoculation promising as biofertilizer since it can supply soluble form of phosphorus.

Keywords: Phosphate Solubilizing Bacteria, Phosphorus, PGPR

CHAPTER 1

INTRODUCTION

1.1 Background of the study

Oryza sativa L. or commonly known as paddy or rice are the most essential and major grains commodity in the world. It has a very long journey of cultivation history. Present, the history of paddy was originated are still questionable. Some say, the paddy were originated from the Southern China, India or Thailand and like tradition or religion, paddy has been deeply rooted in the daily of people in the whole world.

In paddy field, supplement inputs in harvest creation by roots are vital organ of plant to mineral sustenance. High supplement uptake rate is important for the end goal to meet requests for ideal development. 17 supplements that fundamental for plant development as particle yet the accessible type of supplement in the dirt are constrained. Real supplements (C, H, O, N, P, K, Ca, Mg and S) are imperative instead of minor supplements (Zn, Cu, Fe, Mn, B, Mo, Cl and Ni). Application of chemical fertilizers in 20th century will increase the crop yield worldwide more to 50% (Ghanbari et al., 2012). Constrained measure of supplement in the dirt will limit the root development.

Utilization of Plant Growth Promoting Rhizobacteria (PGPR) to the plant can be considered as one of alternating options to the mineral fertilizers that required by