

**MAXIMIZATION OF AEROBIC RICE YIELD WITH
REDUCED WATER USAGE**

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ABSTRACT

MAXIMIZATION OF AEROBIC RICE YIELD WITH REDUCED WATER USAGE

Water scarcity is becoming a major problem in agricultural industries, especially in rice field which requires plenty of irrigation water along its life period. Water scarcity will reduce the production of rice whereas the human population is recently increasing drastically and causes shortage of food supply. Rice as the staple food caters nearly 50% of world population. To overcome this problem, the flooded rice planting system is switched to aerobic rice planting in order to save water. To maximize aerobic rice yield with low usage of water, alternate wetting and drying (AWD) method was adopted. The water usage can be minimized by reducing seepage (S), percolation (P) and evapotranspiration (ET) in land preparation. The yield maximization is also affected through field practice management by controlling weeds, pests and diseases and nutrient supply.

CHAPTER 1

INTRODUCTION

1.1 Introduction to Rice Cultivation

Rice plant is categorized as seed grass with scientific name of *Oryza sativa*. It is a monocot plant that grows as an annual plant (Figure 1.1) (IRRI, 2009). This plant can grow from 1 to 1.8 m tall but it is depending on rice variety and the type of soil. Rice is a type of cereal grain that becomes a staple food consumed by most human population in the world, especially in Asia where rice is their main food.



Figure1.1: *Oryza sativa*

The scientific classification of rice is as follow:

Kingdom: Plantae

Order: Poales

Family: Poaceae

Genus: *Oryza*

Species: *O. sativa*