

PENGEMBANGAN PERTANIAN CERDAS BERBASIS SMART TEKNOLOGI SEBAGAI UPAYA WUJUDKAN PERTANIAN TAHAN IKLIM DAN PENINGKATAN HASIL PANEN BERAS ORGANIC

by Prof. Ir. Moh. Khairudin, M.T., Ph.D., IPU. ASEAN.Eng. Muhammad Luthfi Hakim, S. T., M. Eng, Dr. Asri Widowati Ahmad Hanif Asshahid, Yamsya Fathoni N M, Andara Dwi Hermawan Faishal Aziz Rahmat, Kemal Hakim Bachmid, Hilal Fahrul Hamam

ABSTRACT

The real agriculture problem in the tropics, especially in Indonesia, is the existence of a rainy season and a dry season. During the rainy season, agriculture in Indonesia in general can run smoothly because the water source as the main supply of water for various types of plants is available regularly and in abundance. During the rainy season, agricultural products abound, including livestock, because animal feed is available in abundance. Another phenomenon occurs during the dry season, where the water supply is minimal or even unavailable, causing the planting process to turn upside down and even fail before the harvest season. This research will bridge the agricultural sector so that it can continue to produce and be resistant to climate change so that it is hoped that the agricultural sector can increase its production value. This research will utilize engineering variable measurements of soil water availability, soil moisture, soil aeration, humidity, temperature of the planting environment, wind speed, sunlight conditions, and real time monitoring of plant conditions. Engineering measurements of several determinant variables in agriculture will be followed by response actions to the measurement results, it is hoped that the process of maintaining crop quality is maintained for 24 hours all day until harvest.

This research aims to (1) develop a smart technology-integrated organic rice farming model to support food security during the challenges of changing global seasons. (2) The increase in organic rice production due to the planting to harvesting process is supported by all organic rice fertilizer variables that are maintained accurately by IoT. (3) Supporting independent student learning activities so that they can carry out productive activities in society in implementing their field of knowledge.

Kata Kunci: organic rice, food security, smart agriculture, smart technology.