VERNANDA PRAHANDITYA, 20.240.0105

IMPLEMENTASI ALAT PENGUSIR HAMA PADI DI PERSAWAHAN BERBASIS INTERNET OF THINGS PADA DESA PANDANSARI KECAMATAN WARUNGASEM KABUPATEN BATANG

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117+XVIII halaman / 100 gambar / 13 tabel / 9 lampiran / 41 pustaka (2015-2023)

ABSTRAK

Permasalahan yang ada pada Balai Penyuluhan Pertanian (BPP) Desa Pandansari karena populasi serangga atau burung yang menyerang secara bergerombol, terlebih pada kondisi tertentu seperti musim menjelang panen, tanaman padi matang sudah terisi bulir akan menjadi sasaran hama dan berimbas pada hasil panen kurang memuaskan, sedangkan petani pasti akan tergoda untuk menggunakan bahan kimia atau pestisida agar tanaman padi terhindar dari serangan hama. Sehingga dibangun Implementasi Alat Pengusir Hama Padi di Persawahan Berbasis Internet of Things Pada Desa Pandansari Kecamatan Warungasem Kabupaten Batang yang dapat menampilkan update serangan hama berbasis IoT melalui website, sistem ini dibuat menggunakan metode waterfall melalui tahap Communication (Project Initiation & Requirements Gathering), Planning (Estimating, Scheduling, Tracking), Modeling (Analysis & Design), Construction (Code & Test), Deployment (Delivery, Support, Feedback). Sistem pengusiran hama padi berbasis IoT dirancang menggunakan alat bantu flowchart, diagram block sistem, dan lembar kerja tampilan. Hasil pengujian media menggunakan metode pengujian black box testing, white box testing, dan pengujian User Acceptance Test (UAT). Hasil pengujian menunjukkan bahwa spesifikasi media sudah sesuai dengan kebutuhan pengguna, mudah digunakan karena mudah dipahami, dapat melihat histori serangan hama padi serta dapat membantu petani dalam mengelola pengguna dan mengawasi serangan hama padi dari jarak jauh. Kekurangan dari sistem yang sudah dibangun yaitu perlu penambahan sensor bisa mendeteksi jangkauan hama di lahan yang lebih luas dan penambahan fitur notifikasi push melalui smartphone pada saat pengguna sedang tidak masuk langsung ke website.

Kata Kunci: *Alat Pengusir Hama Padi di Persawahan Berbasis IoT, Arduino, Waterfall, IoT.*

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IMPLEMENTATION OF RICE PEST REPELLENTS IN RICE FIELDS BASED ON INTERNET OF THINGS IN PANDANSARI VILLAGE WARUNGASEM DISTRICT BATANG REGENCY,

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ABSTRACT

The problems that exist at the Agricultural Extension Center (BPP) of Pandansari Village are due to the population of insects or birds that attack in groups, especially in certain conditions such as the season before harvest, ripe rice plants that have been filled with grain will be targeted by pests and have an impact on unsatisfactory crop yields, while farmers will definitely be tempted to use chemicals or pesticides so that rice plants avoid pest attacks. So that the Implementation of Rice Pest Repellent Tools in Rice Fields Based on the Internet of Things was built in Pandansari Village Warungasem District Batang Regency which can display IoT-based pest attack updates through the website, this system is made using the waterfall method through the Communication (Project Initiation & Requirements Gathering), Planning (Estimating, Scheduling, Tracking), Modeling (Analysis & Design), Construction (Code & Test), Deployment (Delivery, Support, Feedback). The IoT-based rice pest expulsion system is designed using flowchart tools, system block diagrams, and display worksheets. The results of the media test used black box testing, white box testing, and User Acceptance Test (UAT) testing methods. The test results show that the media specifications are in accordance with the needs of users, easy to use because they are easy to understand, can see the history of rice pest attacks and can help farmers in managing users and monitoring rice pest attacks remotely. The disadvantages of the system that have been built are the need for additional sensors that can detect the range of pests in a wider area and the addition of a push notification feature through a smartphone when the user is not directly entering the website.

***Keywords**: Rice Pest Repellent in Rice Fields Based on IoT, Arduino, Waterfall, IoT.*