

ABSTRAK

UPTD Balai Pengawasan dan Sertifikasi Benih Tanaman Perkebunan merupakan instansi pemerintah yang berperan dalam pengelolaan produksi, distribusi, serta pelayanan permohonan bantuan bibit tanaman kepada kelompok tani. Berdasarkan hasil penelitian, proses pengelolaan data produksi bibit, stok bibit, permohonan bantuan bibit, verifikasi persyaratan, penyaluran bibit, dan penyusunan laporan masih menghadapi beberapa kendala, seperti data yang belum terintegrasi, proses administrasi yang memerlukan waktu relatif lama, serta penyusunan laporan yang masih dilakukan secara manual sehingga berpotensi menimbulkan kesalahan pencatatan. Penelitian ini bertujuan untuk merancang dan membangun Aplikasi Distribusi dan Pelaporan Produksi Bibit Tanaman Berbasis Website pada UPTD Balai Pengawasan dan Sertifikasi Benih Tanaman Perkebunan guna meningkatkan efektivitas, efisiensi, dan ketepatan dalam pengelolaan data. Metode pengembangan sistem yang digunakan adalah *Waterfall*, sedangkan teknik pengumpulan data dilakukan melalui observasi, wawancara, dan studi pustaka. Pengujian sistem menggunakan metode *Black Box Testing* untuk memastikan setiap fungsi aplikasi berjalan sesuai dengan kebutuhan pengguna. Hasil penelitian menunjukkan bahwa aplikasi yang dibangun mampu mengelola data pengguna, kelompok tani, pegawai, wilayah, kategori bibit, data bibit, produksi bibit, stok bibit, persyaratan, permohonan bantuan bibit, verifikasi oleh pegawai, persetujuan oleh pemimpin, informasi, serta penyajian laporan secara terintegrasi. Aplikasi juga menerapkan hak akses berdasarkan peran pengguna, yaitu Admin, Kelompok Tani, Pegawai, dan Pemimpin, sehingga proses administrasi, pemantauan distribusi, pelaporan produksi, serta pengambilan keputusan dapat dilakukan secara lebih cepat, akurat, transparan, aman, dan terorganisir. Berdasarkan hasil pengujian menggunakan metode *Black Box Testing*, seluruh fitur utama aplikasi telah berjalan sesuai dengan fungsi yang diharapkan dan memenuhi kebutuhan pengguna.

Kata kunci: distribusi bibit tanaman, pelaporan produksi, aplikasi berbasis *website*, *Waterfall*, *Black Box Testing*.

ABSTRACT

The UPTD Balai Pengawasan dan Sertifikasi Benih Tanaman Perkebunan is a government institution that plays a role in managing seedling production, distribution, and seedling assistance services for farmer groups. Based on the study, the management of seedling production data, seedling stock, seedling assistance requests, requirement verification, seedling distribution, and report preparation still faces several obstacles, such as unintegrated data, time-consuming administrative processes, and report preparation that still requires manual processing. These conditions may lead to delays in information delivery and increase the risk of data recording errors. This study aims to design and develop a Web-Based Plant Seedling Distribution and Production Reporting Application at the UPTD Balai Pengawasan dan Sertifikasi Benih Tanaman Perkebunan to improve the effectiveness, efficiency, and accuracy of data management. The system development method used in this study is the Waterfall method, while data collection techniques include observation, interviews, and literature study. System testing was conducted using the Black Box Testing method to ensure that each application function operates according to user requirements. The results of this study show that the developed application is able to manage user data, farmer group data, employee data, regional data, seedling categories, seedling data, seedling production, seedling stock, requirements, seedling assistance requests, employee verification, leader approval, information, and integrated report presentation. The application also implements role-based access control for four users, namely Administrator, Farmer Group, Employee, and Leader, so that administration, distribution monitoring, production reporting, and decision-making processes can be carried out more quickly, accurately, transparently, securely, and systematically. Based on the results of Black Box Testing, all main features of the application operate properly and meet user needs.

Keywords: plant seedling distribution, production reporting, web-based application, Waterfall, Black Box Testing.