ABSTRACT

CV XYZ is a company engaged in the production and export of cinnamon, with its main production area located in Kerinci, Jambi. One of the challenges faced by this company is meeting the international quality standards for exported products, particularly regarding pesticide use limitations. Strict international regulations have led to the rejection of several cinnamon products found to contain pesticide levels exceeding the permissible limits. Therefore, the company requires a traceability system that can monitor and document the entire supply chain of cinnamon, from farmers to the export stage, ensuring transparency and product quality.

This research aims to design a blockchain-based traceability system that can track and ensure the safety and quality of cinnamon products throughout the production and shipping processes. Blockchain was chosen for its ability to provide immutable and transparent transaction records, ensuring that each product can be traced back to its source. The methods used in this study include a Business Process Improvement approach to enhance the efficiency of existing business processes, as well as the design of blockchain-based smart contracts to manage transaction records in the supply chain.The results of the study indicate that the design of the blockchain-based traceability system can improve the transparency and accuracy of tracking cinnamon products. This system records every critical stage in the supply chain, including pesticide use by farmers, processing steps, and product delivery to international customers. Testing was conducted using black box testing methods to ensure all system functions operate correctly, and the results showed that the system meets user needs. With the implementation of this system, the company can enhance its product delivery and reduce the risk of product rejection due to pesticide regulation violations.

In conclusion, the blockchain-based traceability system has significantly improved business processes. Tools such as Bureaucracy Elimination and Upgrading have increased process cycle efficiency from 27% to 86%. This system ensures transparency and accuracy in tracking cinnamon products, as well as compliance with international pesticide regulations. CV XYZ can effectively monitor pesticide use by farmers, filtering out products that do not meet standards before export. As

a result, the company can maintain customer trust and meet the global market demands for food safety and quality. Overall, the implementation of blockchain not only enhances efficiency but also strengthens CV XYZ's position in the international market by ensuring that exported products meet the desired standards.

Keywords — [***Blockchain, traceability, smart contract, business process improvement, cinnamon***]