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Optimization of Potato Supply Chains Using Data Mining and IoT in Smart Agriculture

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Abstract:

The optimization of potato supply chains in agriculture is crucial for improving efficiency, reducing waste, and ensuring sustainability. This research explores the integration of data mining techniques and IoT technologies to enhance the potato supply chain management process in smart agriculture systems. By deploying IoT sensors across various stages of the supply chain—from production, harvesting, and storage to transportation and retail—real-time data on environmental conditions, crop health, and logistics are continuously monitored and analyzed. Data mining algorithms are then employed to process this vast array of information, uncover patterns, and predict supply chain trends such as demand fluctuations, spoilage risks, and optimal distribution strategies. The optimization aims to streamline operations, reduce costs, minimize losses, and improve the overall efficiency of the potato supply chain. This approach provides valuable insights for farmers, distributors, and retailers, contributing to a more sustainable, responsive, and efficient agricultural system.

Keywords:

Potato supply chain, data mining, IoT, smart agriculture, optimization, sustainable agriculture.

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