

I. INTRODUCTION

1.1. Background

Changes in people's lifestyles in recent years have shown an increasing awareness of the importance of health and food quality. This condition has driven a shift in consumption patterns toward products considered safer for health and more supportive of environmental sustainability. Organic vegetables are increasingly chosen by the public because they are considered healthier and are produced without the use of hazardous chemical substances. Survey results conducted in 2015, 2019, and 2022 indicate that organic vegetables have consistently ranked among the three most preferred organic products in Indonesia (Aliansi Organik Indonesia, 2023). This trend signifies that the demand for organic vegetables continues to grow and holds substantial market potential.

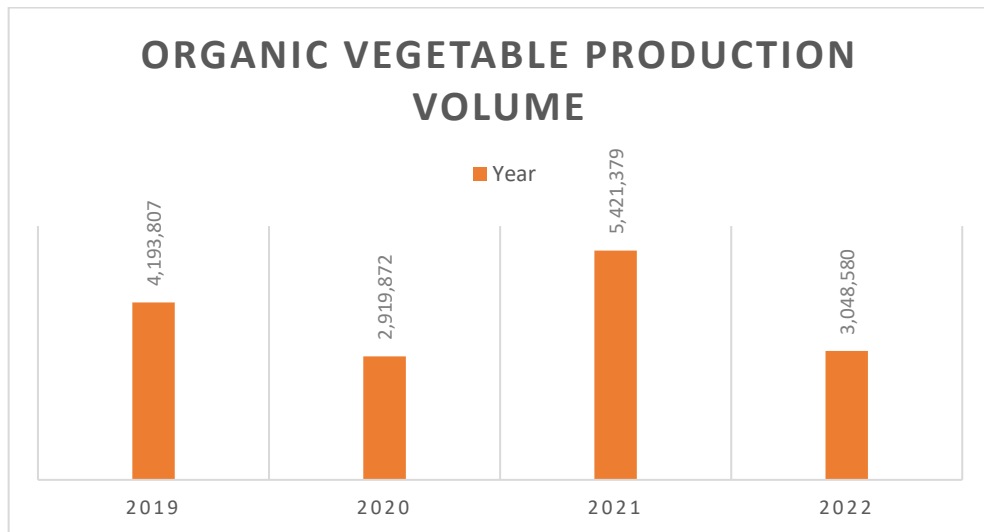


Figure 1.1 Organic Vegetable Production Volume

Source: (Aliansi Organik Indonesia, 2023)

The increasing demand for organic vegetables requires not only sufficient production quantity but also consistent product quality. However, organic vegetable production in Indonesia has not yet been fully stable. Data reported by Aliansi

Organis Indonesia (2023) show that organic vegetable production fluctuated during the 2019–2022 period, with a declining trend in the final year. This decline does not necessarily indicate a decrease in market demand but rather reflects challenges within the production and distribution systems. One of the major challenges is the high risk of quality deterioration throughout the supply chain.

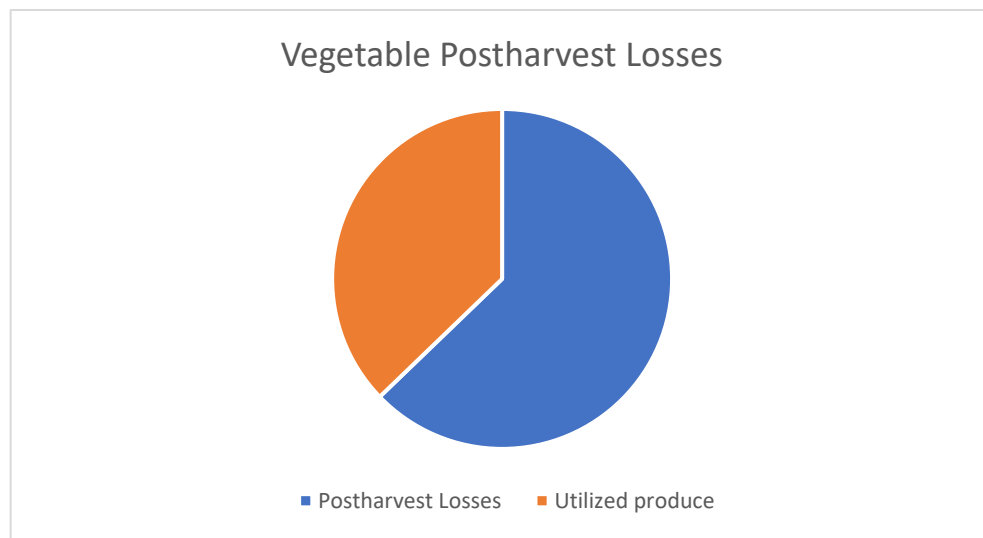


Figure 1.2 Vegetable Postharvest Loss Data
Source: (BAPPENAS, 2021)

Postharvest losses and damage to organic vegetables is still an important issue. The horticultural sector, especially vegetables, experiences postharvest losses of up to 62.8% of the total domestic vegetable supply in Indonesia (BAPPENAS, 2021). This high percentage indicates that a substantial proportion of vegetables experience quality deterioration before reaching consumers. These findings highlight the importance of proper postharvest management to maintain vegetable quality, including that of organic vegetables.

Quality issues become particularly critical when organic vegetables are marketed through modern retail. Modern retail serves as a quality gatekeeper by applying stricter quality standards compared to traditional markets. These quality standards are established based on physical appearance, such as freshness of color,

texture, as well as specific size and grade classifications (H. N. Utami et al., 2024). Products that do not meet these requirements are at risk of rejection or return by retailers. Therefore, the success in the marketing of organic vegetables in modern retail is highly dependent on the ability of producers to maintain the quality of the product until the final stage of distribution.

Efforts to maintain product quality consistently require the implementation of good quality management. Quality management emphasizes that quality is the result of a process that is planned, standardized, and thoroughly controlled. It can be applied to horticultural products that are perishable. With a quality management system, producers can find out the important stages that affect product quality. Without quality control, various irregularities in processes and products can go undetected so that improvements cannot be made and can ultimately cause losses to the company (Fitriah, 2024). Quality control should be implemented throughout the entire production process, from initial handling to product distribution.

Vegetable quality is determined by several main attributes, including freshness, visual appearance, and shelf life to meet distribution requirements (Hu, 2024). Freshness relates to the physiological condition of vegetables after harvest, while shelf life indicates the product's ability to maintain quality during storage and distribution. Visual appearance such as color, texture, and the absence of physical damage are important factors in quality assessment by modern retail. These quality attributes are strongly influenced by postharvest handling practices implemented by producers. Therefore, effective postharvest management is essential for maintaining the quality of organic vegetables.

Effective postharvest management requires clearly defined quality standards as operational guidelines. In Indonesia, the Indonesian National Standard (SNI) 6729:2016 on Organic Agriculture Systems establishes standards covering postharvest handling, storage, transportation, packaging, and product traceability (Badan Standardisasi Nasional, 2016). Twelve's Organic is an organic vegetable producer that has complied with the requirements of SNI 6729:2016 through its organic certification. This certification shows that Twelve's Organic has formally met the standard requirements of organic agriculture systems, including maintaining product quality at the postharvest stage. Nevertheless, the effectiveness of implementing these standards still requires evaluation within the context of modern retail marketing, particularly for leafy vegetables such as pakchoi and choy sum, which are highly perishable.

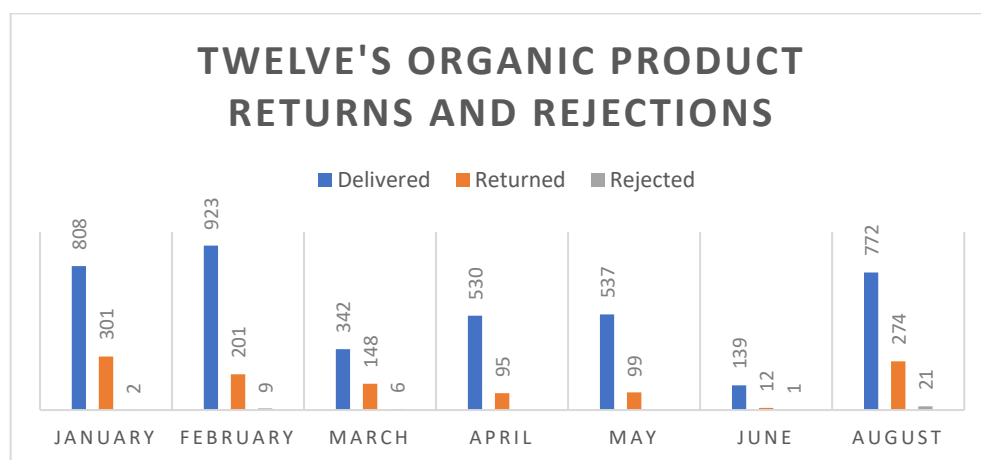


Figure 1.3 Twelve's Organic Product Returns and Rejections
Source: (Twelve's Organic Primary Data, 2025)

The results of observations at Twelve's Organic show that quality problems are still found. Company records show that some products are returned or rejected because of leaf wilting, yellowing, and physical damage occurring during handling and transportation. During certain periods, the number of returned products approaches half of the total products delivered. These conditions result in economic

losses and indicate that several postharvest handling practices still require improvement. The existence of quality standards alone does not necessarily guarantee consistent product quality if priorities for quality improvement have not been appropriately established.

Numerous studies have investigated quality management in different contexts. Salantoni et al. (2020) examines the application of quality management in moringa leaf flour production with a focus on standardizing dry processed products. Siswanto (2024) concerns the determination of production quality priorities in crude palm oil. In addition, the Analytical Hierarchy Process (AHP) method was also applied by (Agnes et al., 2023) who discussed the selection of vegetable types. Research related to modern retail was conducted by Simangunsong and Syamsiyah, (2024) which discussed problems in the agribusiness value chain of Baby Romaine lettuce which focuses on the modern retail market.

Despite these previous studies, several research gaps remain. Until now, studies that specifically applying the AHP method to determine the priority of quality standards for fresh organic vegetables that are perishable are still limited. In addition, research that discusses the prioritization of postharvest quality standards in accordance with the demands of modern retail has also not been widely conducted. These gaps indicate the need for more focused research on fresh organic vegetable commodities.

Research on the identification of mechanisms and priority analysis of quality standards for the postharvest handling of organic vegetables of Twelve's Organic for modern retail marketing is important. The results of the analysis can be the basis for the preparation of more targeted improvement recommendations.

Ultimately, these recommendations are expected to support the consistent maintenance of product quality, reduce product returns and rejections, and strengthen the competitiveness of Twelve's Organic in modern retail markets.

1.2. Research Questions

Based on the description of the background, the research questions of this study are formulated as follows:

1. What is the mechanism of organic vegetable postharvest quality standards at Twelve's Organic?
2. What are the development strategies for postharvest quality standards of organic vegetables at Twelve's Organic?
3. What is the priority postharvest quality standards for handling organic vegetables at Twelve's Organic in modern retail markets?

1.3. Research Objectives

Based on the research questions, this research has a goal to be achieved as an effort to provide solutions to the problems raised.

1. To identify the implementation mechanism of postharvest quality standards for organic vegetables at Twelve's Organic.
2. To analyze the development strategies for postharvest quality standards of organic vegetables at Twelve's Organic.
3. To analyze the priority postharvest quality standards for handling organic vegetables at Twelve's Organic in modern retail markets.

1.4. Research Significance

This research is expected to provide various benefits in theoretical and practical aspects for various interested parties. Here are some of the benefits that are expected to be achieved:

1. **Benefits for Students**

Providing experience to students in applying the theories that have been learned during lectures to real situations through postharvest analysis of organic vegetables. In addition, it provides experience and develops skills in presenting research results in the form of research reports.

2. **Benefits for Twelve's Organic**

Get recommendations for improving organic vegetable quality standards to improve marketing in modern retail.

3. **Benefits for UPN "Veteran" East Java**

Provide data and insights for further research, both for students and academics.