

Quality Revitalization Of Nanas Gati In Sukaharja Through Post-Harvest Good Handling Practices (GHP)

Sylvina Azkyah^{1,*}, Alvina Permata Ramadhani Saputri¹, Ayunda Ayu Anggraeni¹, Majesty Louisandra Hoffman Eman¹, Althaf Sandi Rizqi Hermawan¹, Ardi Malaka Biaro¹, Ali Pradana Putra Patty¹, Widya Hasian Situmeang¹, Tri Budiarto¹, Leonard Dharmawan²

¹ Production Technology and Agricultural Community Development Study Program College of Vocational Studies, IPB University, Cilibende Campus, Jl. Kumbang No. 14, Bogor City, West Java, Indonesia, 16128

² Digital Communication and Media Study Program College of Vocational Studies, IPB University, Cilibende Campus, Jl. Kumbang No. 14, Bogor City, West Java, Indonesia, 16128

*Correspondence Author: azkyahsylvina@apps.ipb.ac.id

Submitted:

29/04/2026

Revision:

04/05/2026

Accepted:

06/06/2026

Published:

22/06/2026

DOI:

<https://doi.org/10.29244/mapace.1.2.66-73>

Keywords:

Good Handling Practices (GHP), Nanas Gati, post-harvest, Sukaharja, quality

ABSTRACT

The objective of this community service activity is to revive and improve the quality of Nanas Gati, a superior local variety from Sukaharja Village, Bogor Regency, which had experienced a decline. The method employed involved institutional strengthening and technology transfer through the extension and demonstration of Good Handling Practices (GHP) post-harvest to the Mekar Sari Farmers Group. The core GHP material comprehensively covered post-harvest handling stages, primarily sorting, grading, sanitation, packaging, and storage. To measure the effectiveness of the extension, a quantitative evaluation using Pre-Test and Post-Test instruments was conducted. Evaluation results indicate a significant 100% increase in farmers' knowledge, with the average score rising from 43.33 (Pre-Test) to 86.67 (Post-Test). This training also emphasized the importance of proper recording and packaging labeling for product quality traceability to increase market appeal. The implementation of GHP is expected to reduce harvest damage, maintain product quality, and increase the economic and selling value of Nanas Gati.

INTRODUCTION

Sukaharja Village, Cijeruk, Bogor Regency, West Java, is a region with extensive land potential and serves as the location of the Mekar Sari Farmers Group, an agricultural community focusing on horticultural commodities. Sukaharja Village has good agricultural potential with a total land area of approximately 531.58 ha, of which agricultural land covers around 148.34 ha. One of the leading agricultural commodities is pineapple, cultivated on approximately 7 ha. This area has historically been known as a producer of Nanas Gati, a superior local variety with high historical and economic potential.

Pineapple (*Ananas comosus* L. Merr) is one of Indonesia's national superior fruits that can produce year-round, making it suitable for fresh consumption as well as being processed into various products. Nutritionally, this fruit is very beneficial for health as it contains 90% water and is enriched with various important minerals such as Potassium, Calcium, Iodine, Sulfur, and Chlorine (Syauqy & Hanina, 2021). Although various studies have discussed the post-harvest handling of pineapples, most literature focuses on large-scale industrial plantations or modern factory processing (Insani et al., 2024). There is a significant community engagement gap regarding the preservation and quality revitalization of local heritage varieties, such as Nanas Gati, at the grassroots farmer group level.

The quality of Nanas Gati from Sukaharja was once a pride, but it has faced a serious decline. Based on historical data, the production of Nanas Gati experienced a critical drop from 40,000 quintals in 2013 to 25,600 quintals in 2017. The main problem exacerbating this decline is the lack of implementation of good handling standards rooted in conventional, generational mindsets. Without proper sorting and grading, farmers traditionally dumped pineapples directly into unlined bamboo baskets. Field data indicates that up to 30% of the fruit could be destroyed or heavily bruised during transportation in pick-up trucks before the implementation of protective nets and grading. This improper handling has resulted in a high rate of physical defects, leading to product rejection and a significant drop in selling value for the Mekar Sari Farmers Group.

Based on this issue, this community service aims to transfer the knowledge of Good Handling Practices (GHP) to the Mekar Sari Farmers Group. GHP is a guideline for proper and correct food handling to keep products safe, clean, and high-quality from the receipt of raw materials, processing, storage to distribution. The novelty and unique contribution of this program lie in its socio-economic approach: it goes beyond merely introducing technical GHP by actively transforming the collective mindset and social dynamics of the farmers to overcome resistance to quality standardization and professional marketing (via product labeling).

The application of GHP is crucial to keep pineapples fresh, not easily spoiled, and safe for consumption. This program is expected to improve farmers' skills in the harvesting and post-harvest process with efficient techniques, thereby reducing harvest damage, maintaining product quality, and ultimately increasing the economic value and market bargaining power of Nanas Gati.

RESEARCH METHODS

This extension program was conducted in Sukaharja Village, Cijeruk District, Bogor Regency, targeting the Mekar Sari Farmers Group. The location was selected due to the region's potential for Nanas Gati cultivation and the need for post-harvest quality improvement.

The program utilized two main approaches: institutional strengthening and technical training. It involved lecturers and students from the Agricultural Production Technology and Community Development Study Program over three months, from September to November 2025. Initially, structured interviews were conducted with the farmers to identify priority problems and specific needs. The gathered data informed the development of a training module tailored to the practical challenges of handling Nanas Gati.

Technical training was delivered through a Good Handling Practices (GHP) extension program, which included group discussions and practical demonstrations. The GHP curriculum covered the complete post-harvest process: sorting, grading, sanitation, packaging, and storage. During the demonstrations, farmers observed efficient post-harvest techniques, such as identifying optimal maturity levels, executing proper washing procedures, and applying weight-based grading.

To evaluate the effectiveness of the extension program, a quantitative assessment was administered using pre-test and post-test instruments. These tests were distributed to all participating members before and after the GHP training. The comparison of the scores was used to measure changes in the farmers' knowledge and to assess the overall outcome of the educational intervention (Handayani, 2025). To measure the impact and effectiveness of the extension activity, quantitative evaluation was conducted through Pre-Test and Post-Test instruments. This testing was carried out before and after the delivery of GHP material to all farmer group members present. The comparison of Pre-Test and Post-Test results serves to prove a significant increase in farmers' knowledge, which becomes an indicator of the success of the intervention conducted (Handayani, 2025).

RESULTS AND DISCUSSION

Initial Assessment and Knowledge Improvement

The initial assessment conducted prior to the intervention revealed that the Mekar Sari Farmers Group lacked an understanding of standard sorting, grading, and optimal storage techniques. A quantitative evaluation was administered to nine core members of the farmer group (N=9) to measure changes in their understanding before and after the Good Handling Practices (GHP) training.

Descriptive data indicated a substantial improvement in comprehension, although inferential statistical analysis (such as a p-value calculation) was not applied due to the small, targeted sample size. The average pre-test score of the participants was 43.33, reflecting a baseline lack of familiarity with standardized post-harvest protocols. Following the training, the average post-test score rose to 86.67, representing a 100% relative increase. As depicted in the assessment graph, individual score values demonstrated a consistent upward trajectory across all nine participants (Bima, Wawan, Sutisna, Dayat, Adam, Acim, Idik, Yayat, and Kubil). The most notable improvements occurred in their ability to distinguish between sorting (removing damaged fruit) and grading (classifying by weight), as well as understanding optimal harvest times.

Observed Behavioral Changes

The increase in theoretical knowledge translated into actual behavioral changes among the adaptive members of the farmer group. Observational data collected during the implementation phase showed a clear transition from conventional habits to GHP standards. Prior to the program, farmers typically threw unclassified pineapples into rough, unlined bamboo baskets. Following the intervention, participating farmers, led by the group chairman,

began applying practical sanitization and handling techniques. These included separating Grade A fruits (2 kg – 2.5 kg), utilizing foam nets for protection, replacing rough bamboo baskets with lined plastic containers, and handling the fruit carefully to minimize bruising. Furthermore, the group initiated the application of product labels for their Grade A pineapples to establish product identity.

Socio-Economic Impact and Market Access

The behavioral changes observed during the post-harvest process directly impacted the economic potential of Nanas Gati. Historically, conventional handling methods resulted in physical damage and bruising of up to 30% during transportation in pick-up trucks. By adopting protective packaging and careful handling, the farmers successfully minimized physical defects. This reduction in post-harvest losses aligns with findings by Srilestari (2021), who emphasized that proper sorting, ventilated packaging, and careful transportation are fundamental to minimizing physical damage and maximizing the economic value of horticultural products.

Furthermore, the implementation of a strict grading system shifted the economic dynamics between the farmers and the middlemen (*tengkulak*). Previously, farmers relied on wholesale pricing (*borongan*) dictated entirely by buyers. With the new ability to classify their harvest into Grade A, B, and C, the farmers developed collective bargaining power, allowing them to negotiate higher, grade-based prices.

Product Differentiation through Labeling

The introduction of packaging labels served as a critical step in revitalizing the local brand image of Nanas Gati. While long-term sales data are required to quantitatively confirm sustained revenue growth, the initial application of labels facilitated product differentiation and traceability. This professional presentation opened new opportunities for the farmer group to bypass traditional middlemen and target modern retail channels and fruit shops. As noted by Insani et al. (2024), professional packaging and labeling are critical requirements for penetrating broader, premium markets and establishing consumer trust, as they serve not only as an information medium but also as a guarantee of quality. Overall, the extension program demonstrated that providing technical GHP knowledge, when accompanied by institutional support, can effectively alter farmer behavior, reduce economic losses, and create a pathway for the revitalization of declining local commodities.

Extension Activity for the Application of Good Handling Practices (GHP) Post-Harvest Pineapple

The extension and demonstration of Good Handling Practices (GHP) activity was conducted on November 23, 2025, at the Secretariat of the Mekar Sari Farmers Group, Sukaharja Village, Cijeruk, which is located at the foot of Mount Salak. Technology transfer was carried out through the GHP extension method supported by discussions and practical demonstrations. The core GHP material presented covered the entire post-harvest flow of pineapple: Sorting, Grading (classification), Sanitation, Packaging, and Storage. Practical

demonstrations allowed farmers to directly visualize efficient techniques.

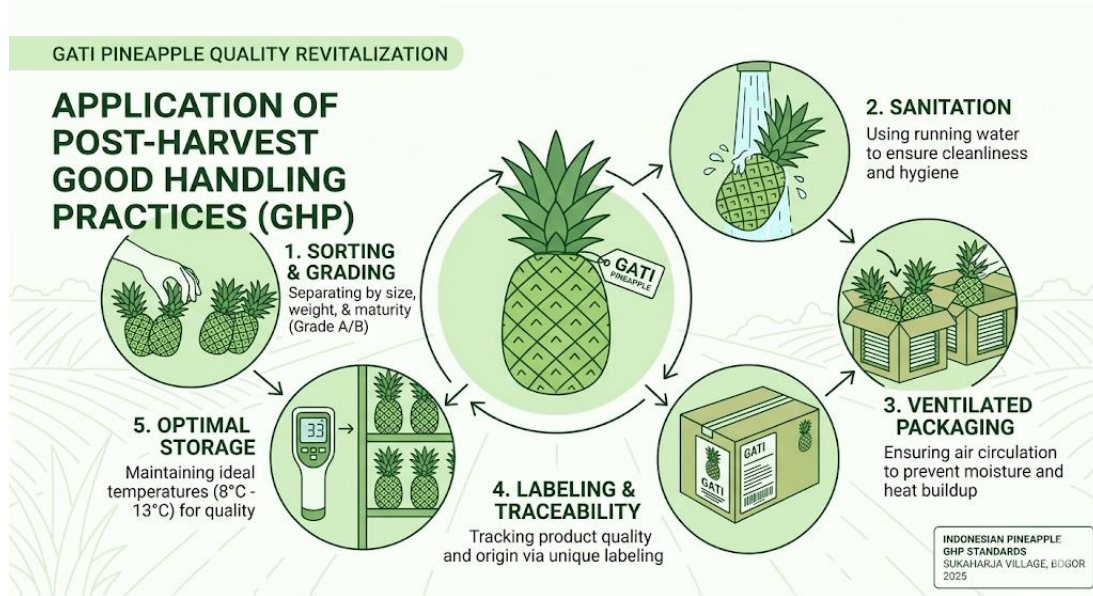


Figure 1. Flowchart of Good Handling Practices (GHP) for Post-Harvest Nanas Gati.

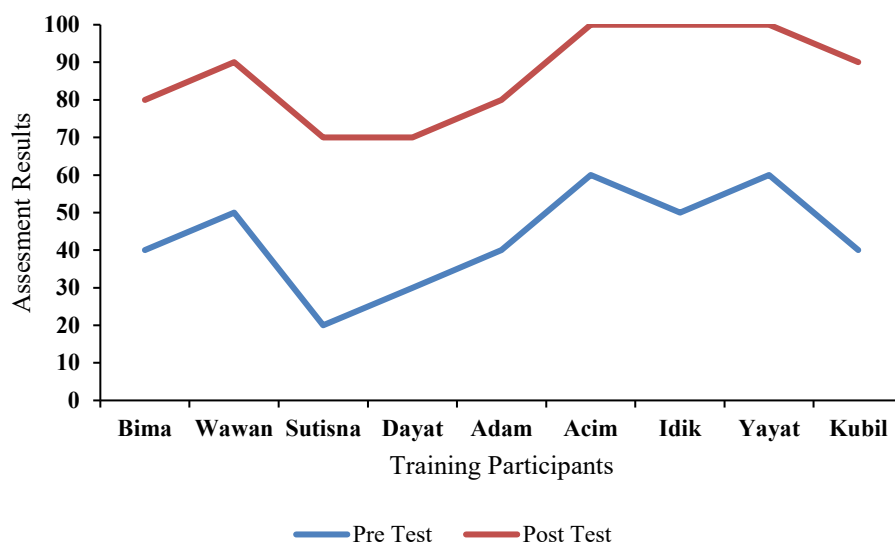
To measure the impact and effectiveness of the extension activity, quantitative evaluation was conducted through Pre-Test and Post-Test instruments. This testing was carried out before and after the delivery of GHP material to all farmer group members present. The comparison of Pre-Test and Post-Test results serves to prove a significant increase in farmers' knowledge, which becomes an indicator of the success of the intervention conducted.

The extension activity focused primarily on practical technology transfer essential to reviving the quality of Nanas Gati. The initial session covered training in Sorting, Grading, and Sanitation. Farmer group members successfully understood the fundamental difference between Sorting, which is separating rotten or damaged pineapples, and Grading (Classification), which is the activity of dividing pineapples based on weight or size. To meet market standards, farmers were trained to classify pineapple quality, where pineapples weighing 2 kg to 2.5 kg are included in the Grade A category (Rina Srilestari, 2021). In addition, the recommended sanitation practice is clean and running water, to ensure pineapples are free from germs and maintain their safety.

Furthermore, proper post-harvest handling was strongly emphasized through the Packaging and Storage material. In the packaging process, it is mandatory for pineapple packaging cardboard boxes to be given air holes. The provision of air holes aims to ensure smooth air circulation and prevent the fruit from becoming stuffy or hot during the distribution process (Rina Srilestari, 2021). In addition to ensuring physical quality, the Mekar Sari Farmers Group was also assisted in Packaging Labeling activities. Labeling is crucial because labels not only function as mandatory information media (such as product name, producer, and quality grade), but also as a means of product promotion and differentiation in the market. In the context of Nanas Gati from Sukaharja, our group designed packaging labels to increase the selling appeal and economic value of the product, while strengthening the local brand image being revived. Professional and informative labeling can increase consumer confidence and directly contribute to increased sales (Insani et al., 2024).

Overall, this extension activity succeeded in achieving substantial knowledge improvement targets among members of the Mekar Sari Farmers Group. The increase in

extension effectiveness was measured quantitatively through a comparison of Pre-Test and Post-Test scores given to participants before and after the delivery of Good Handling Practices (GHP) material. The comparative results showed a significant improvement in understanding, as evidenced by the average Post-Test scores that were consistently much higher than the Pre-Test scores. This improvement centered on understanding the basic concepts of post-harvest quality, especially on technical aspects: first, the ideal harvest criteria, namely in the morning (7-10 AM) or afternoon (3-5 PM), and second, understanding the difference between the function of Sorting (separating rotten/damaged) and Grading (Classification) (dividing based on weight/size). This knowledge becomes an indicator of the success of the intervention conducted, providing a strong foundation for farmers to transition from conventional handling habits to efficient and profitable GHP practices.



Schemes 1. Comparison of Pre-Test and Post-Test Scores of Mekar Sari Farmers Group Members (N=9) Before and After GHP Training.

The graph visually shows a very significant increase in knowledge:

1. **Initial Score (Pre-Test):** The average Pre-Test score of farmer group members was at 43.33. This score indicates that before the extension, the farmers' basic understanding of GHP standards for post-harvest pineapple was at a below-average level.
2. **Final Score (Post-Test):** The average Post-Test score increased sharply to 86.67. This figure shows that after receiving GHP material and demonstrations, the understanding of farmer group members rose dramatically.
3. **Percentage Increase:** There was an increase in understanding of 100.00% from the average Pre-Test to Post-Test score. This twofold increase proves the effectiveness of the extension methods used (discussion, demonstration, and GHP material) in transferring practical knowledge to the Mekar Sari Farmers Group.

The comparison results show a significant improvement in understanding among participants. This improvement is reflected in farmers' understanding of key GHP concepts, such as:

- **The Importance of GHP:** Farmers understand that GHP aims to keep pineapples clean, safe, and high-quality until they reach the buyer.
- **Ideal Harvest Time and Sorting:** Understanding of the recommended technical aspects, as well as the difference between the function of Sorting (separating rotten/damaged) and Grading (dividing based on weight/size) (Insani et al., 2024).
- **Purpose of Recording:** Farmers understand that recording the harvest date, quantity, and quality aims to establish traceability if there are quality complaints from buyers.

CONCLUSION

The agricultural extension program aimed at revitalizing the quality of Nanas Gati through Good Handling Practices (GHP) was completed in Sukaharja Village, Bogor Regency, with the Mekar Sari Farmers Group acting as the primary partner. The quantitative evaluation indicated a substantial improvement in the farmers' knowledge, with the average score increasing from 43.33 (SD = 13.23) to 86.67 (SD = 12.25), reflecting a 100% relative increase.

This transfer of knowledge covered crucial technical aspects, such as distinguishing between sorting and grading, establishing quality classifications (Grade A, B, C), performing product sanitation using clean running water, and understanding ideal storage conditions. By adopting these standardized technical procedures and recognizing the importance of packaging and labeling for product traceability, the farmer group acquired the foundational tools necessary to minimize post-harvest damage. Ultimately, the socio-economic approach and the implementation of GHP served as critical steps in maintaining product quality, empowering the farmers' market bargaining power, and enhancing the long-term economic viability of Nanas Gati in the modern market.

ACKNOWLEDGMENTS

Acknowledgements are conveyed to various parties who have supported the success of our Agricultural Extension Activity. Special thanks are specifically extended to the Agricultural Production Technology and Community Development Study Program (Study Program PPP), Vocational School IPB University, for facility support and academic framework. High appreciation is also directed to the Mekar Sari Farmers Group for their active participation, openness, and enthusiasm in the effort to revive Nanas Gati. Thanks are also extended to the Field Agricultural Extension Officers (PPL) and Self-Supporting Extension Officers of Sukaharja Village who have facilitated field coordination. Finally, thank you to the Sukaharja Village Government for the permits, institutional support, and good collaboration established during the activity.

REFERENCES

- Directorate of Horticulture, Ministry of Agriculture. (2014). Post-harvest pineapple [Pascapanen nenas]. Directorate General of Horticulture, Ministry of Agriculture of the Republic of Indonesia.
- Insani, R., Santoso, B. B., & Jaya, I. K. D. (2024). Teknik Pengolahan Pasca Panen Nanas (*Ananas comosus* (L.) Merr.) di Pabrik Japan Agriculture Cooperative (JA) Prefektur Okinawa Jepang. *Jurnal Ilmiah Mahasiswa Agrokomplek*, 3(3), 219–225.
- Srilestari, R. (2021). *Pascapanen nanas*. LPPM UPN "VETERAN" YOGYAKARTA.

- Syauqy, A., & Hanina. (2021). Pengaruh buah nanas (*Ananas comosus* L. Merr) terhadap peningkatan pH saliva yang terpapar minuman berkarbonasi. *Jambi Medical Journal*, 9(2), 130–137.
- Handayani, L. (2025). Efektivitas Penyuluhan Terhadap Peningkatan Pengetahuan Pencegahan Hipertensi Di Desa Wawatu, Moramo Utara. *Jurnal Wins (Jurnal Wawasan Promosi Kesehatan)*, 5(4), 195–199.