International Journal of Multidisciplinary Research and Growth Evaluation.

Adoption of Good Agricultural Practice (GAP) in Maize Cultivation: An Environmental Sustainability Perspective

Siti Lailatul Mufida Halida [1*], Eko Setiawan [2], Apri Arisandi [3]
[1-3] Master of Natural Resource Management, University Trunojoyo Madura, East Java, Indonesia

* Corresponding Author: **Siti Lailatul Mufida Halida**

Article Info

ISSN (Online): 2582-7138
Impact Factor (RSIF): 7.98
Volume: 07
Issue: 01
Received: 04-11-2025
Accepted: 08-12-2025
Published: 01-01-2026
Page No: 01-06

Abstract
Corn (*Zea mays L.*) productivity in Pegantenan District and Pamekasan District remains relatively low due to limited adoption of sustainable farming practices. This study aims to analyze the extent of implementation of Good Agricultural Practices (GAP) and the factors influencing it in corn cultivation. The study employed a mixed-methods approach, collecting data through observation, interviews, and questionnaires administered to 30 corn farmers, using purposive sampling. The level of GAP implementation was measured using a Likert scale and analyzed descriptively, while the influencing factors were analyzed using multiple linear regression. The results showed that the level of GAP implementation was 71%, with an average score of 2.14 (sufficient). The highest implementation aspects were land selection and water management, whereas the lowest was occupational health and safety (K3). The activity of farmer groups had a significant effect on GAP implementation, whereas other factors did not. Better GAP implementation supports environmental sustainability.

DOI: https://doi.org/10.54660/.IJMRGE.2026.7.1.01-06

Keywords: Good Agricultural Practices (GAP), Corn Cultivation, GAP Implementation Level, Environmental Sustainability, Limiting Factors

1. Introduction

The agriculture, forestry, and fisheries sector are the most significant contributor to the economy of Pamekasan Regency's Gross Regional Domestic Product (GRDP). This sector accounts for 31.69% of GRDP at current prices (BPS, 2024) [2]. Corn (Zea mays L.) is a high-value commodity that plays a vital role in food security, animal feed supply, and agro-industry Development. Based on data on additional planted area and productivity, Pegantenan District has a corn planting area of 2,337 ha, with a productivity of 3.65 tons/ha (DKPP, 2024) [5]. This corn productivity is relatively low, well below the national average of 6 tons/ha. Low corn productivity in the Pegantenan District is attributable to limited adoption of agricultural technologies in corn cultivation. In corn cultivation, farmers still rely on conventional agricultural practices oriented toward short-term increases in production. Furthermore, farmers find it difficult to adopt technological changes, such as the use of superior varieties, balanced fertilizer application, proper plant spacing, and effective pest and disease control. Limited adoption of environmentally friendly and sustainable technologies and insufficient attention to environmental conservation can pose serious challenges to the long-term sustainability of corn production systems.

Good Agricultural Practices (GAP) are guidelines for proper cultivation to increase agricultural productivity while ensuring food safety and product quality, occupational health and safety (K3), production sustainability, and environmental friendliness (Alizah & Rum, 2020) [1]. GAP implementation is grouped into three categories: cultivation, harvesting, and post-harvest, encompassing principles and activities related to soil management, seed use, fertilization, pest control, water efficiency, and harvest and post-harvest handling (Situmorang, 2022) [11]. In corn cultivation, farmers must implement GAP because it increases production efficiency, controls pests and diseases, reduces yield losses, and improves corn quality (Dai *et al*., 2024) [3].

Proper application of GAP is expected to reduce environmental degradation, improve soil health, and optimize the use of production inputs to support sustainable agriculture. However, GAP implementation varies widely among farmers, particularly among those with small landholdings. Generally, GAP research has focused more on production outcomes from GAP implementation in cultivation, whereas studies on the level of implementation across aspects, influencing factors, and environmental sustainability remain limited. Therefore, this study aims to analyze the extent of implementation of Good Agricultural Practice (GAP) in corn cultivation and the factors influencing its implementation. Using a quantitative-qualitative approach, this research is expected to provide a deeper understanding of good agricultural practices and sustainable agricultural Development.

2. Method

This study employed a mixed-methods approach, combining quantitative and qualitative methods, and collected data through observation, interviews, and a literature review. A purposive sampling technique was used, involving 30 respondents selected based on specific criteria. The study was conducted from June to November 2025 in several villages in Pegantenan District, based on regional potential. The level of Good Agricultural Practice (GAP) implementation was measured using a Likert scale. The research procedure is as follows:

2.1. Problem formulation

At this stage, the author identifies the problem and determines which issues will be discussed in the research.

2.2. Literature search and Observation

The author reviews and synthesizes information relevant to the research topic from various sources, including journals, books, regulations, and other scientific documents, to strengthen the theoretical basis and support the research analysis. The author used both primary and secondary data. Primary data was obtained from interviews and observations using a questionnaire. Secondary data were derived from theoretical studies in the literature.

2.3. Data analysis and parameters

Instrument testing used validity and reliability tests to ensure measurement accuracy. The implementation of Good Agricultural Practices (GAP) was assessed using a Likert scale with three response options: 1 = Low, 2 = Moderate, and 3 = Good. The level of GAP implementation and the average GAP implementation were calculated using the following formula. (Nahraeni *et al.*, 2020):

$$\%\ \text{GAP Implementation} = \frac{\text{actual weight}}{\text{maximum weight}} \times 100\%$$

Where:
Actual weight = sum of weights obtained from each GAP component
Maximum weight = maximum possible weight of all GAP components

$$\bar{X} = \frac{\sum X_i}{n}$$

Where:
$\bar{X}$ = average score
X_i = score of each indicator
n = number of indicators assessed

The method for calculating and dividing the overall GAP implementation level classes uses the following formula (Pralaya & Setiawan, 2024):

$$I = \frac{r}{k}$$

Where: I = class interval
r = difference between maximum and minimum values
k = number of categories

The range score calculation yielded the classification of GAP adoption levels presented in Table 1.

Table 1: Classification of GAP Adoption Levels

Score	Category	Range
1	Low	1 – 1,67
2	Moderate	1,68 – 2,34
3	Good	2,35 - 3

Testing the factors influencing GAP implementation used multiple linear regression analysis. The variables used were age, education level, farming experience, land area, and farmer group activity. The parameters (variables) used are presented in the following equation.:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$$

Where:
Y = Farmer adoption of Good Agricultural Practice (GAP)
X_1 = Age
X_2 = Education Level
X_3 = Farming Experience
X_4 = Land Area
X_5 = Farmer Group Activity

3. Results and Discussion

3.1. Results

Based on field observations, data were collected on respondent characteristics, the level of GAP implementation, and factors influencing it. Respondent characteristics provide information regarding the socioeconomic conditions and experiences of the farmers studied. Respondent characteristics can influence mindsets, decision-making, and the level of implementation in farming activities. Information on the study respondents' characteristics is presented in Table 2.

Level of Implementation of Good Agricultural Practices (GAP)

The implementation of GAP for corn commodities is in accordance with Regulation of the Minister of Agriculture Number 48 of 2006. Aspects of GAP implementation are reviewed, including location and land selection, seed use, land preparation, planting, fertilization, pest and disease control, water management, harvesting, post-harvest handling, and occupational health and safety (K3). Research among 30 respondents in East Bulangan Village, East Tebul

Village, and Tanjung Village indicates that the level of implementation of Good Agricultural Practices (GAP) for Corn Cultivation is 71%, with an average GAP score of 2.14. The level of implementation of Good Agricultural Practices (GAP) is presented in Table 3. The GAP assessment criteria for each aspect are mandatory, highly recommended, or recommended, totaling 30 assessment indicators. The assessment criteria for Good Agricultural Practices (GAP) are presented in Table 4.

Table 2: Characteristics of Research Respondents

No	Variable	Category	Total
1	Age	< 25 years	0
		25 - 35 years	1
		36 - 45 years	14
		> 45 years	15
2	Gender	Male	26
		Female	4
3	Education Level	Elementary School	17
		Junior High School	2
		Senior High School	3
		Others	8
4	Farming Experience	< 5 years	0
		6 - 15 years	9
		16 - 25 years	15
		> 25 years	6
5	Land Area	0 - 0,5 ha	23
		> 0,5 - 1 ha	7
		> 1 - 1,5 ha	0
		> 1,5 ha	0
6	Farmer Group Activity	Never	4
		Rarely	15
		Often	11

Table 3: Level of implementation of Good Agricultural Practices (GAP)

No	Aspect	Score	Maximum Score	Average	% GAP Adoption
1	Site and Land Selection	320	360	2,67	89%
2	Seed Use	258	360	2,15	72%
3	Land Preparation	234	270	2,60	87%
4	Planting	188	270	2,09	70%
5	Fertilization	171	270	1,90	63%
6	Pest and Disease Control	210	360	1,75	58%
7	Water Management	148	180	2,47	82%
8	Harvest and Post-Harvest	255	360	2,13	71%
9	Occupational Health and Safety (OHS)	133	270	1,48	49%
Total		1917	2700	2,14	71%

Table 4: Criteria for Good Agricultural Practices (GAP) Assessment

No	Aspect	Criteria			Indicators	Average	Category
		M	HR	R			
1	Site and Land Selection	2	1	1	4	2,67	Good
2	Seed Use	2	1	1	4	2,15	Moderate
3	Land Preparation	1	1	1	3	2,60	Good
4	Planting	1	1	1	3	2,09	Moderate
5	Fertilization	0	2	1	3	1,90	Moderate
6	Pest and Disease Control	1	2	1	4	1,75	Moderate
7	Water Management	1	1	0	2	2,47	Good
8	Harvest and Post-Harvest	2	1	1	4	2,13	Moderate
9	Occupational Health and Safety (OHS)	1	2	0	3	1,48	Low
Total		11	12	7	30	2,14	Moderate

Note: M = Mandatory, HR = Highly recommended, R = Recommended

Table 5: Factors Influencing Good Agricultural Practices (GAP) Adoption

Variable	Regression Coefficient	t-value	Sig.
Constant	0,505	5,709	0,000
Age (X_1)	-0,027	-0,882	0,387
Education Level (X_2)	0,014	1,318	0,200
Farming Experience (X_3)	0,023	0,913	0,370
Land Area (X_4)	-0,025	-0,658	0,517
Farmer Group Activity (X_5)	0,105	4,392	0,000
Dependent Variable (Y): GAP Adoption			
R^2	0,527		
F-value	5,357		

Factors Influencing Good Agricultural Practices (GAP) Adoption

Factors influencing GAP implementation consist of internal and external factors. Internal factors include farmer characteristics related to technology adoption, such as age, education level, length of farming experience, and land area. External factors are those outside individual farmers, such as farmer institutions. The level of activity within farmer groups can influence the level of GAP implementation. The results of the multiple linear regression analysis on factors influencing the implementation of Good Agricultural Practices (GAP) for corn are presented in Table 5.

From the multiple linear regression test at the 95% confidence level (0.05), the R Square (R2) value of 0.527 was obtained, indicating that 52.7% of the variance in the implementation of Good Agricultural Practice (GAP) is explained by the six variables in the model. In other words, factors such as age, education, length of farming, land area, and group activity can influence the implementation of GAP by 52.7%; the remaining 47.3% is influenced by other factors not studied, such as seed quality, agroecological conditions, government or agricultural institution support, and others. From the test results, the multiple linear regression model was obtained as follows.

$$Y = 0.505 - 0.027\,X_1 + 0.014\,X_2 + 0.023\,X_3 - 0.025\,X_4 + 0.105\,X_5$$

3.2. Discussion

Level of Implementation of Good Agricultural Practices (GAP)

The level of GAP implementation in corn cultivation is sufficient, with an average implementation score of 2.14. This indicates that farmers have a sufficient understanding of corn cultivation in accordance with GAP principles. The highest level of implementation is in land selection, land preparation, and water management, while the lowest level is in occupational health and safety (K3). The level of implementation in each aspect is as follows:

1. Site and land selection, indicators for site and land selection are seen from the land being free from hazardous waste (B3) contamination, he explained, irrigation, soil pH ranging from 5.5 – 7, and land far from sources of household waste. Most farmers already recognize the importance of site and land selection, although it is not entirely consistent with GAP standards. This is evident from the land used, which averages 5.5-7, although some soils have an acidic (4) or alkaline (9) pH. According to Kahfi *et al.* (2023), the soil pH value provides information on the acid-base levels at each soil depth to identify the high or low levels of nutrients that plants can absorb. During corn plant growth, an optimal soil pH is approximately 5.5-7.
2. Seed Use, most of the corn seeds used by farmers in Pegantenan District are Bisi 2 and NK 007 corn seeds. The level of GAP implementation in the use of these seeds remains suboptimal, with an application level of 2.15. This is because some farmers still rely on previous harvests and local seeds for cost efficiency. Repeated use of seeds can reduce production costs but also decrease corn output or productivity. According to (Yusuf *et al*., 2022) [14] and (Dewi *et al*., 2018) [4], hybrid corn varieties are corn varieties that have superior characteristics and direct descendants (F1) from cross-breeding, so hybrid varieties cannot be planted repeatedly. This is because repeated planting can erode parental characteristics and reduce yield.
3. **Land Preparation:** The level of GAP implementation in this aspect is in the good category, meaning farmers understand the importance of land preparation, whether manually or mechanically (with a hand tractor), and the use of organic fertilizer as a base fertilizer. Land preparation is carried out once before planting to improve soil structure. After one week of plowing, most farmers create beds approximately 1 m wide. Organic fertilizer is applied to provide nutrients for plants and to improve soil properties. The organic material commonly used by farmers is manure (cow dung). Organic fertilizer affects soil nutrient availability; it contributes nutrients and sustainably improves soil quality. The greater the amount of organic material, the greater the availability of nutrients (Ganti *et al*., 2023) [6].
4. **Planting:** Some farmers have implemented several GAP indicators, such as planting according to climatic conditions, using planting distances, and replanting when plants die. Farmers use two planting distances: 20x25 cm with a bed spacing of 30-50 cm, and 20x65 cm or 20x70 cm. Planting method is an important factor in corn cultivation. Planting in a single hole ensures that nutrients are not divided, thereby maximizing corn growth (Suhana *et al*., 2023) [12].
5. **Fertilization:** The level of fertilizer application is still not in accordance with good agricultural practices (GAP) guidelines. Farmers fertilize based on inherited habits rather than on soil test results. In addition, fertilization in cultivation is not at an appropriate dosage. Fertilizer use must be balanced to ensure that plants grow and produce optimally. According to Suhana *et al*. (2023) [12], corn fertilization is ideally applied twice, with a total dose of 600 kg/ha, using a 2:1 NPK-to-urea ratio of 400 kg NPK and 200 kg urea. The first fertilization is done at the age of 0-10 HST to support the early vegetative phase, while the second fertilization is done at 30-35 HST when entering the generative phase and starting to form cobs.

Fertilizer is applied by digging holes 5-10 cm from the plant to promote optimal nutrient uptake.

6. **Pest and Disease Control:** This stage has not been optimally implemented, meaning farmers are not yet implementing the principles of Integrated Pest Management (IPM). Integrated pest management significantly impacts production sustainability, harvest quality, and environmental safety. In pest control measures, farmers often employ reactive rather than preventive measures. Reactive control involves responding to pest outbreaks and disease outbreaks when they occur. Chemical pesticides are used more frequently than botanical pesticides because they are more effective.
7. **Water Management:** The average water management implementation score was 2.47, or an implementation rate of 82%. This indicates that water management in corn cultivation is effective and that farmers understand how to manage water efficiently; however, it is not yet fully optimized. Efficient water management through drip irrigation requires substantial investment, particularly for smallholder farmers.
8. **Harvest and Post-Harvest:** This aspect is measured by the age of corn harvest at 100-110 days after harvest, drying, and recording the harvest. Farmers in Pegantenan District sell more corn to middlemen at harvest than they dry for subsequent sale. Corn sorting is carried out by separating pest-damaged corn from undamaged corn; however, this remains suboptimal. Corn harvesting methods remain very simple, relying on manual labor and sickles. Corn dried on the tree has a moisture content of 23-25%, while corn kernels dried using sunlight have a moisture content of 12-13% (Napitupulu & Atmaja, 2011) [9].
9. **Occupational Health and Safety (OHS):** The implementation of OHS in corn cultivation is reviewed with respect to the use of Personal Protective Equipment (PPE). The majority of farmers are still unaware of the importance of using PPE, especially when spraying pesticides. Personal protective equipment is essential to ensure the health and safety of farmers.

Factors Influencing Good Agricultural Practices (GAP) Adoption

The calculated t-value and its significance indicate the results of tests for factors influencing the implementation of GAP. Value, the calculated t value > t Table and sig. If p-value < 0.05, the variable influences the level of GAP implementation. The age variable yielded a calculated t-value of -0.882 and a significant. A value of 0.387 indicates that age does not affect the implementation of GAP in corn crops. This is because most farmers are elderly rather than millennial. Older farmers are often accustomed to traditional farming practices. Research by Putri *et al*. (2021) shows that productive-age farmers have higher motivation to adopt the latest innovations and greater capacity to understand them than non-productive-age or older farmers.

Education has a calculated t value of 1.318 and a sig value of 0.200; the calculated t value (1.318) < t Table (2.069) and sig. 0.05, then H0 is rejected, indicating that education does not affect the level of GAP implementation. The level of education does not affect the implementation of GAP because corn is a relatively easy crop to cultivate and does not require mastery of complex techniques, such as horticultural practices.

The length of farming has a calculated t-value of 0.913 with a significant p-value. Value of 0.370, the calculated t value < t Table (2.069), and the sig. If the p-value > 0.05, then H0 is accepted, indicating that the length of farming does not affect the level of GAP implementation. The duration of farming does not affect it, as farmers maintain old practices and do not adopt innovations. In contrast to research by Firdaus *et al*. (2024), the longer the farming experience, the greater the likelihood that farmers will implement GAP. Farming experience has a positive influence on the level of GAP adoption; the longer the farming experience, the greater the tendency to increase production levels.

Land area has a sig. Value> 0.05 and the calculated t value (-0.658) < t Table (2.069) then Ho is rejected, meaning that land area does not influence the level of GAP implementation. Land area has no effect because the area of land cultivated by farmers ranges from 0.25 to 1 ha, so it is classified as a small farmer, and farmers do not really think about how to produce products according to GAP standards. According to Sriyadi *et al*. (2015), small farmers are more focused on meeting household needs than on producing high-quality products.

Group activity has a calculated t-value (4.392) > t-table (2.069) and is significant. Value (0.000) < 0.05, so the hypothesis is accepted. Group activity influences the level of GAP implementation in corn cultivation. Farmer groups act as a learning forum for farmers to share information and experiences. Active activities within farmer groups, such as demonstration plots, enable farmers to receive direct counseling from agricultural extension workers and to access information on production facilities and government assistance. This is in accordance with research (Kadar *et al*., 2024) [7], which indicates that farmer groups play an important role in encouraging the adoption of farmer innovations and facilitating learning sessions.

Implementation of GAP to Environmental Sustainability

Kondisi lahan petani dengan tingkat adopsi GAP-nya cukup. The condition of farmers' land, with a high level of GAP adoption, varies with soil pH. Farmers who apply GAP highly have better land conditions characterized by a more stable soil pH of 6.5-7.0. This pH stability is inseparable from the use of organic fertilizers and dolomite in agricultural practices. However, the opposite is true for farmers who do not prioritize GAP application; their agricultural land tends to have soil pH that is too acidic or too alkaline, namely 3.5 or 9. This is consistent with research (Trisnawati *et al*., 2022) [13], excessive and continuous fertilizer use can cause soil pH to become acidic. Acidic soil pH reduces nutrient availability for plants and affects productivity. One of the fertilizers that causes pH to become acidic is nitrogen-containing fertilizer, such as Urea, ZA, and KCl.

In principle, the implementation of GAP integrates sustainability, both environmental and economic. Each aspect of GAP makes a distinct yet interrelated contribution to sustainable agriculture. In terms of site selection, selecting land free of hazardous waste (B3) contamination and not prone to flooding enables optimal crop growth and reduces the risk of crop failure. In terms of seed use, the use of seeds from previous harvests indirectly reduces the use of production inputs, especially for corn. Repeated seed use can support economic sustainability, but without proper management, it can hinder sustainable production.

Furthermore, repeated seed use is recommended for local varieties; applying it to hybrid seeds will reduce productivity. Minimal use of botanical pesticides can affect long-term environmental sustainability. Repeated, long-term pesticide use can degrade environmental quality, for example, by polluting soil and water and disrupting the balance of natural enemies. Economically, dependence on chemical pesticides can increase production input costs due to their relatively high cost and the potential for pest resistance. Therefore, the application of GAP in current agricultural conditions not only impacts environmental sustainability but also economic sustainability, particularly the production cost structure. Additional costs incurred in the initial stages of production contribute to long-term cost efficiency and environmental sustainability, supporting sustainable farming.

4. Conclusion

The level of GAP implementation in corn cultivation is 71%, with an average score of 2.14 (sufficient). The highest aspect of GAP implementation is site selection, at 89% with an average score of 2.67. In contrast, the lowest is Occupational Health and Safety (K3), at 49% with an average score of 1.48 (poor category). The factor influencing the implementation of GAP in corn cultivation is the level of activity of farmer groups. The activity of farmer groups is the most significant factor, as they serve as forums for learning and information exchange among farmers. The more active the activities within farmer groups, the more information is obtained, particularly regarding cultivation practices to increase productivity.

5. Acknowledgements

Farmers are expected to reduce their reliance on chemical fertilizers and increase the use of organic fertilizers and dolomite to maintain soil pH. Furthermore, they are expected to deepen their understanding of GAP implementation, particularly with respect to balanced fertilization, the use of certified seeds, integrated pest management, and Occupational Health and Safety (OHS).

6. References

1. Alizah MN, Rum M. Kinerja pemasaran dan strategi pengembangan jagung hibrida unggul Madura MH-3 di Kabupaten Bangkalan. Agriscience. 2020;1(2):448-63. doi:10.21107/agriscience.v1i2.8177
2. Badan Pusat Statistik Kabupaten Pamekasan. Produk domestik regional bruto Kabupaten Pamekasan menurut lapangan usaha tahun 2019-2023. Vol. 09. Pamekasan: Badan Pusat Statistik Kabupaten Pamekasan; 2024.
3. Dai R, Rauf A, Sirajuddin Z. Persepsi petani terhadap komponen inovasi dalam good agricultural practice jagung hibrida di Desa Suka Makmur. JEPA. 2024;8(3):907-18.
4. Dewi ARYT, Santoso SI, Prasetyo E. Analisis efisiensi teknis dan ekonomi penggunaan faktor-faktor produksi pada usahatani jagung hibrida di Kelompok Tani Sidomulyo 01 Kecamatan Sukolilo Kabupaten Pati. J Ilmu-Ilmu Pertan. 2018;2(1):25-34.
5. Dinas Ketahanan Pangan dan Pertanian Kabupaten Pamekasan. Laporan SP tahun 2023 Kabupaten Pamekasan. Pamekasan: Dinas Ketahanan Pangan dan Pertanian Kabupaten Pamekasan; 2024.
6. Ganti NWSLS, Ginting S, Leomo S. Pengaruh pemberian pupuk organik terhadap sifat kimia tanah masam dan hasil tanaman jagung (Zea mays L.). Berk Penelit Agron. 2023;11(1):24-34.
7. Kadar M, Rauf A, Sirajuddin Z. Peran kelompok tani terhadap peningkatan adopsi good agricultural pratice (GAP) jagung hibrida di Desa Mongiilo Kabupaten Bone Bolango. J Food Secur Agroind. 2024;2(1):33-43. doi:10.58184/jfsa.v2i1.289
8. Nahraeni W, Masithoh S, Rahayu A, Awaliah L. Penerapan good agricultural practices (GAP) jeruk pamelo (Citrus maxima (Burm.) Merr.). J Agribisains. 2020;6(1):50-9.
9. Napitupulu FH, Atmaja YP. Perancangan dan pengujian alat pengering jagung dengan tipe cabinet dryer untuk kapasitas 9 kg per-siklus. J Dinamis. 2011;2(8):32-43.
10. Pralaya G, Setiawan H. Sistem penilaian terhadap kinerja guru berbasis web (studi kasus: SMP Negeri 2 Sukodono). Phys Sci Life Sci Eng. 2024;1(2):1-15. doi:10.47134/pslse.v1i2.202
11. Situmorang D. Keterikatan penerapan good agriculutral practices (GAP) dengan pertanian berkelanjutan pada komoditas cabai merah dan bawang merah. In: Kementerian Pertanian, editor. Jakarta: Kementerian Pertanian RI; 2022.
12. Suhana S, Rauf A, Sirajuddin Z. Adopsi good agricultural practice (GAP) jagung hibrida untuk meningkatkan produktivitas jagung oleh petani. Ziraa'Ah. 2023;48(1):101-14. doi:10.31602/zmip.v48i1.9317
13. Trisnawati A, Beja HD, Jeksen J. Analisis status kesuburan tanah pada kebun petani Desa Ladogahar Kecamatan Nita Kabupaten Sikka. J LOCUS Penelit Pengabd. 2022;1(2):68-80.
14. Yusuf M, Alam MN, Sultan H. Analisis komparatif pendapatan usahatani jagung hibrida dan jagung komposit di Desa Labuan Topososo Kecamatan Labuan Kabupaten Donggala. E-J Agrotekbis. 2022;10(1):211-22.

How to Cite This Article

Halida SLM, Setiawan E, Arisandi A. Adoption of good agricultural practice (GAP) in maize cultivation: an environmental sustainability perspective. Int J Multidiscip Res Growth Eval. 2026;7(1):1–6. doi:10.54660/IJMRGE.2026.7.1.01-06.