



Research Paper

Analysis Feasibility and Technical Efficiency of Mustajab Rice Farming in Reuleung Geuleumpang Village, Kuta Malaka District, Aceh Besar Regency

Meliyati¹, Ainal Mardhiah¹ , Khumaira¹

¹Faculty of Agriculture, Universitas Abulyatama, Aceh Besar 23372, Indonesia

 ainalmardhiah_pertanian@abulyatama.ac.id

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Abstract

Reuleung Geuleumpang Village, located in Kuta Malaka Subdistrict, Aceh Besar District, is one of the areas that has cultivated Mustajab rice variety for the past two years. This study aims to analyze the economic feasibility and technical efficiency of Mustajab rice farming in the village. The method used is a survey involving 37 farmer respondents, with data collected through questionnaires and interviews. The data were analyzed using income analysis, R/C ratio, and the Cobb-Douglas production function. The results show that Mustajab rice farming generates an average income of IDR 13,331,270 per planting season. The R/C ratio of 4.75 indicates that the farming is economically feasible, as every IDR 1 of production cost yields IDR 4.75 in revenue. The RTS value of 0.847 indicates constant decreasing returns. Additional input increase won't result in proportional output increase, so the farming is not technically efficient. Factors such as land area, seed quantity, fertilizers, pesticides, and labor significantly affect production. Mustajab rice farming is feasible and profitable in R/C ratio but not technically efficient due to soil pH (8-9) in the study area, while Mustajab variety is designed for low pH. Mac bean supports this finding. Further research is necessary to optimize farming results.

Keywords: Mustajab rice variety; Feasibility analysis; Technical efficiency

1. Introduction

Rice is a major commodity that serves as a source of carbohydrates for the Indonesian population. Every year, the demand for rice in Indonesia increases due to the large population growth and the development of the food and feed industries [1]. Reuleung Geuleumpang village is a village where farmers face many problems in achieving optimal production efficiency. Some



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of these include the inability to access the technology, capital, and information needed to implement proper agronomic techniques. Therefore, it is important to conduct a technical efficiency analysis to identify the components that influence the level of rice farming efficiency, especially for the Mustajab variety. According to [2], Efficient and reliable agricultural technology can help farmers speed up the farming process and increase productivity. Traditional rice farming systems require a lot of time and labor, but the yields obtained are often not what is expected, making it difficult to improve the farmers' economy and well-being. According to [3], Horticulture is one of the agricultural subsectors that is very important for the welfare of farmers in the area due to the favorable climate conditions and growing requirements.

Reuleung Geuleumpang Village, Kuta Malaka District, is one of the villages that plants the mustajab variety of paddy rice. Farmers in Reuleung Geuleumpang Village have been cultivating the Mustajab rice variety for two years. One of the drawbacks of the Mustajab rice variety is that the panicles emerge later, making it more difficult to choose the harvest time. Farmers in Reuleung Geuleumpang Village have been cultivating the Mustajab rice variety for two years. One of the drawbacks of the Mustajab rice variety is that the panicles emerge later, making it more difficult to choose the harvest time [4].

Table 1. Planted area, harvested area, production, and productivity of paddy rice in Kuta Malaka District, Aceh Besar Regency, 2021-2024.

Year	Planted Area (Ha)	Harvested Area (Ha)	Production (Tons)	Productivity (Tons/Ha)
2021	700	700	4.406	94,6
2022	576	576	4.212	107,8
2023	422	422	3.008	84,5
2024	700	700	3.899	84,3
Average growth (%)	25%	25%	22%	28%

Source: agricultural extension office, 2021-2024

The table above shows that the average growth of paddy rice in Kuta Malaka District has an average growth of 25% in planting area, 25% in harvested area, and 22% in production, with a productivity of 28%. Research objectives to determine whether Mustajab variety paddy farming is suitable for development and to identify the factors influencing the level of technical efficiency in Mustajab variety paddy farming.

2. Method

Gampong Reuleung Geulumpang is one of the Gampongs within the Kuta Malaka sub-district, Samahani III mukim, Aceh Besar Regency (formed by Law Number 7 of 1956), with a land area of 105 Ha (1.05 KM²). Gampong Reuleung Geulumpang consists of 3 (Three) hamlets, namely Ujong Blang Hamlet, Simpang Tiga Hamlet, and Jeurat Basyik Hamlet. It is located at 5.2 – 5.8 LU and 95 -95.48 BT, with the following boundaries: North: Montasik District, South: Rice fields, West: Gampong Reuleung Karing, East: Gampong Lamsiteh Cot. The topography consists of plains, rolling hills, and mountains. The altitude ranges from 0 - 100 meters above sea level (masl) to 101 - 1,500 masl, with the majority (100%) falling within 100 - 500 masl. A population is a collection of data that shares the same characteristics and is the subject of inference. Inferential statistics is based on two fundamental concepts: the population as the entire dataset, whether real or imaginary, and the sample [12]. The population in this study consists of all farmers who cultivate the Mustajab rice variety in Reuleung Geuleumpang Village, Kuta Malaka District,

Aceh Besar Regency, totaling 37 farmers. The method used in this study is the survey method. The survey method is a method used to obtain data from a specific natural (non-artificial) location, but the researcher intervenes in data collection, for example, by distributing questionnaires, tests, structured interviews, and so on [13].

Revenue analysis used to answer the second objective. Revenue analysis can be mathematically formulated as follows [11].

$$\pi = TR - TC$$

Explanation:

π = Profit

TR = Total revenue

TC = Total cost

The analysis model in this study is hypothesis 1, feasibility analysis. The R/C Ratio indicates the viability of a business, whether it is profitable, breaks even, or can be experiencing a loss. Systematically (R/C) can be formulated as follows [14]: $R/C \text{ Ratio} = \frac{\text{TR}}{\text{TC}}$. Explanation: TR = Total revenue. TC = total cost.

Criteria based on the R/C Ratio are: If the R/C ratio > 1 , rice farming of the Mustajab variety is profitable. If the R/C ratio $= 1$, rice farming of the Mustajab variety is neither profitable nor unprofitable. If the R/C ratio < 1 , rice farming of the Mustajab variety is not profitable.

This study uses the Cobb-Douglass production function approach to determine the relationship of each production factor to rice production output [15]. Expected values of regression coefficients: $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 > 0$ and $\rho_1 > 0$ To measure the technical efficiency of the i -th farmer's, the expected value of $E(-u_i)$ is used. Factors influencing technical efficiency were analyzed using multiple linear regression analysis with estimation of regression coefficient parameters. The analysis model in this study is hypothesis 2, which uses a quantitative descriptive method with the Cobb-Douglass production function, which can be written as follows [16]: $Y = \beta_0 X_1^{\beta_1} X_2^{\beta_2} X_3^{\beta_3} X_4^{\beta_4} X_5^{\beta_5} e^u$

Explanation:

Y = Rice Production (Tons)

X_1 = Land area (Ha)

X_2 = Seeds (Kg)

X_3 = Manpower (HKP)

X_4 = Fertilizer (Kg)

X_5 = Pesticides (Liter)

β_0 = Intercept

eu = standard error

The F-statistic test is essentially used to show whether all the independent variables included in the model collectively influence the dependent variable. The F-test is performed by comparing the calculated F value with the F-table value at a significance level of $\alpha = 5\%$. The formula used is as follows ([17]). $F_{hit} = \frac{R^2 / (K - 1)}{(1 - R^2) / (n - K)}$

Explanation:

F_{hit} = Calculated Fvalue

R^2 = Coefficient of determination

K = Number of independent variables or degrees of freedom (df) in the regression

n = Sample size where

H0: production factors have no significant effect

H1: production factors have a significant effect.

Test statistic used: This test is conducted by comparing the calculated F value with the F table value at a significance level of $\alpha = 5\%$. Decision-making criteria: If $F_{hitung} > F_{tabel}$: H0 is rejected and H1 is accepted, meaning the production factors of land area, seeds, fertilizer, pesticides, and labor collectively have a significant impact on paddy production. If $F_{hitung} < F_{tabel}$: H0 is accepted and H1 is rejected, meaning the production factors of land area, seeds, fertilizer, pesticides, and labor collectively do not have a significant impact on paddy production.

The t-statistic test was conducted to see if the independent variables in the model individually had a significant effect on the dependent variable, thus determining whether each factor of production, such as land area, seeds, fertilizer, pesticides, and labor, used separately, had a significant effect on rice seed production (Y), with the following hypotheses: $t_{hit} = \frac{\mathbf{b_i}}{\mathbf{s_{b_i}}}$. Where: t_{hit} = Calculated t-value b_i = Regression coefficient, s_{b_i} = Standard deviation or standard error. With a significance level of $\alpha = 5\%$, then: If $t_{calculated} > t_{table}$; if the statistical value is less than 0.05, then H0 is rejected and H1 is accepted, meaning the i-th production factor significantly affects rice productivity. If $t_{calculated} < t_{table}$; if the statistical value is greater than 0.05, then H0 is accepted and H1 is rejected, meaning the i-th production factor does not significantly affect rice production.

3. Result

3.1 Characteristics of rice farmers cultivating the mustajab variety in reuleung geuleumpang village

The characteristics of farmers are certainly based on the aspects within them that influence farmers' income. In the context of this research, the characteristics of interest are those that affect the welfare level of paddy farmers [18]. The characteristics of the farmers referred to in this study include age, education, experience, and the number of family dependents. The characteristics of farmers are closely related to the activities of rice farming using the Mustajab variety. For more details, the characteristics of Mustajab variety rice farmers in Reuleung Geuleumpang Village, Kuta Malaka District, Aceh Besar Regency are shown in Table 2 below.

Table 2. Average characteristics of rice farmers using the mustajab variety in Reuleung Geuleumpang Village, Kuta Malaka District, Aceh Besar Regency, 2024

Characteristics of Farmers	Units	Average
Age	Year	53
Education	Year	12,46
Farming Experience	Year	16,84
Family Dependents	Soul	3,05
Land area	Hectare	0,36

Source: Primary data processed in 2025

In the table above, it can be seen that the average age of rice farmers in Reuleung Geuleumpang Village is considered productive for work, at 53 years old. Age in farming is related to work ability, thinking ability, and analytical skills. Because young farmers are generally less capable of adopting new innovations and have less work experience compared to older farmers, and their thinking is still oriented toward old conditions/traditions. The average education level of paddy farmers in Reuleung Geuleumpang Village, Kuta Malaka District, Aceh

Besar Regency is 12.46 years, which is equivalent to high school. This means that paddy farmers in this research area are able to write and read well and are receptive to new information. Education will influence the way farmers think. And this is certainly related to the farmers' ability to increase their production efforts. The average experience of paddy farmers in Reuleung Geuleumpang Village, Kuta Malaka District, is 16.84 years, which classifies them as highly experienced farmers in their operations. Farming experience is closely related to the farming productivity achieved.

And also, those with more experience will find it easier to make good and correct decisions. Regarding the number of dependents farmers have in their families, the average number of dependents for paddy farmers is 3.05 people. With these dependents, paddy farmers can direct their efforts to cultivate their farms while also being responsible for their families' lives. The size of the sample farmers' land area affects the amount of farm income they earn; the larger the farmers' cultivated land area, the higher their production, and consequently, their income also increases [19]. The average area of cultivated land owned by rice farmers in Reuleung Geuleumpang Village, Kuta Malaka District, Aceh Besar Regency is 0.36.

Production costs are the expenses incurred when processing raw materials into finished products ready for market [20]. The production costs in this study are operational costs, which can be paid in cash or non-cash, or calculated for each planting season. The calculations are based on the prices that prevailed during the study. Calculating production costs is very important for farm decision-making because it can show the amount of income farmers receive. All costs incurred in the production process, whether paid in cash or not, are called production costs. Costs are divided into two parts: fixed costs and variable costs. For more details, the average production cost for rice farming of the Mustajab variety in the study area can be seen in the following Table 3.

Table 3. Average production cost per production cycle for mustajab rice farming in Reuleung Geuleumpang Village, 2025

No	Cost components	Production cost (Rp)/Mt	Production cost/hectare
1	Fixed cost of equipment depreciation	52.827	69.583,33
2	Variable Costs		
	Seeds	290.333	800.000
	Inorganic fertilizers		
	Urea	205.081	385.000
	NPK	172.703	300.000
	KCL	85.385	75.000
	Magnesium	32.750	45.000
	Pesticides		
	Bentan	23.108	60.000
	Labor	2.777.876,45	5.604.571,43
	Amount	3.638.820,45	7.339.166,66

Source: processed primary data, 2025

The table above shows that the average cost of production per hectare for Mustajab rice farming in Reuleung Geuleumpang Village is Rp. 7,117,583.33, with the largest expense for labor at Rp.5,383,000/Ha. This is followed by seed costs of Rp. 800,000/Ha, Urea fertilizer costs of Rp.385,000/Ha, NPK fertilizer costs of Rp. 300,000/Ha, KCL fertilizer costs of Rp. 75,000/Ha, Bentan pesticide costs of Rp. 60,000/Ha, and Magnesium fertilizer costs of Rp. 45,000/Ha.

3.2 Value of production

Production is an activity to create or increase the usefulness of a good to meet needs. The activity of increasing the usefulness of an object without changing its form is called service production. Meanwhile, the activity of increasing the usefulness of an object by changing its properties and form is called goods production [21]. The value of production is the gross income obtained from multiplying total production by the selling price prevailing at the time of the study, expressed in rupiah. The price of unhusked rice prevailing at the time of the study was Rp. 6,500/Kg, resulting in an average production value of Rp. 39,487,500/Ha.

3.3 Income of paddy farmers

Income is the revenue derived from the sale of paddy grains (in rupiah) after deducting the total production costs incurred by paddy farmers. The average selling price of paddy grains is Rp.6,500/Kg. The income of farmers per production is Rp.32,403,667/Ha. Details can be seen in Appendix 5. For more clarity, please refer to Table 4 below.

Table 4. Average production of paddy grain in Reuleung Geuleumpang Village

Description	Unit	Amount
Paddy rice production	Kg/Ha	2.597
Value of paddy production	Rp/Ha	16.882.432
Cost of Rice Paddy Production	Rp/Ha	3.551.162
Farmers' Income	Rp/Ha	13.331.270

Source: processed primary data, 2025

Based on the table above, it can be seen that the average production of paddy per farm is 2,597 Kg, with the value of paddy production being approximately Rp. 16,882,432 and the cost of paddy production being Rp. 3,551,162. This represents the production cost during the production process. The amount of income earned by rice farmers in the study area is highly related to the production costs incurred. To prove whether production costs affect the income of these rice farmers, it is calculated using the following formula:

$$\begin{aligned}
 \pi &= TR-TC \\
 &= \text{Rp.}16.882.432/\text{UT} - \text{Rp.}3.551.162/\text{UT} \\
 &= \text{Rp.}13.331.270/\text{UT}
 \end{aligned}$$

The total revenue from paddy farming in the study area was Rp. 16,882,432/UT, and the production cost was Rp. 3,551,162/UT, resulting in a net income for paddy farmers of Rp. 13,331,270/UT.

3.4 Feasibility analysis: R/C ratio

As for the average production quantity, selling price, sales value, production value, production cost, and revenue, the following formulas can be used:

$$\begin{aligned}
 \text{R/C Ratio} &= \frac{TR}{TC} \\
 &= 16.882.432 / 3.551.162 \\
 &= 4,75
 \end{aligned}$$

Thus, it can be said that the Mustajab variety of paddy farming is suitable for cultivation because > 1 .

3.5 Technical efficiency analysis

$$Y = \beta_0 X_1 \beta_1 X_2 \beta_2 X_3 \beta_3 X_4 \beta_4 X_5 \beta_5 X_6 \beta_6 X_7 \beta_7 X_8 \beta_8; eu$$

Description:

$$\ln Y = 8.204 + 0,867 \ln X_1 + 0,150 \ln X_2 - 0,511 \ln X_3 - 0,002 \ln X_4 + 0,014 \ln X_5 - 0,059 \ln X_6 - 0,018 \ln X_7 + 0,288 \ln X_8$$

Return to Scale Value (RTS) = 0,847

$$t_{\text{tabel}} (\alpha=0,05) = 2,028$$

$$t_{\text{tabel}} (\alpha= 0,01) = 2,719$$

If you look closely at the regression coefficients and each independent variable ($X_1, X_2, X_3, X_4, X_5, X_6, X_7$, and X_8) in the equation above, it can be interpreted as follows:

- The constant 8.204 means that if the values of $X_1, X_2, X_3, X_4, X_5, X_6, X_7$, and X_8 are 1, then production (Y) is 8.204 kg.
- Under the condition where variable X_1 (Land Area) is positively correlated with a coefficient value of 0.867, meaning that for every 1% increase in land area, production will increase by 0.867%, assuming other variables remain constant.
- Under the condition where variable X_2 (Seeds) is positively correlated but not significant, with a coefficient value of 0.150. The calculated t-value (0.589) is less than the table t-value (2.028), and the significance value (0.560) is greater than 0.05 at a 95% confidence level. Therefore, H_1 is rejected and H_0 is accepted, meaning there is no significant effect on the production of mustajab variety paddy rice.
- Under the condition of variable X_3 (Urea Fertilizer), it is negatively correlated with a coefficient value of -0.511, meaning that for every 1% increase in urea fertilizer, production will decrease by 0.867%, assuming other variables remain constant.
- Under the condition of variable X_4 (NPK Fertilizer), it is negatively correlated with a coefficient value of -0.002, meaning that for every 1% increase in NPK fertilizer, production will decrease by -0.002%, assuming other variables remain constant.
- Under the condition of variable X_5 (KCL Fertilizer), it is positively correlated with a coefficient value of 0.014, meaning that for every 1% increase in KCL fertilizer, production will increase by 0.014%, assuming other variables remain constant.
- Under the condition of variable X_6 (Magnesium Fertilizer), it is positively correlated with a coefficient value of 0.059, meaning that for every 1% increase in magnesium fertilizer, production will increase by 0.059%, assuming other variables remain constant.
- Under the condition of variable X_7 (Pesticide), it is negatively correlated with a coefficient value of -0.018, meaning that for every 1% increase in pesticide use, production will decrease by -0.018%, assuming

3.6 Coefficient of determination (R²) and correlation coefficient (R)

Determination analysis in multiple linear regression is used to determine the percentage of the simultaneous contribution of independent variables to the dependent variable. This coefficient indicates the percentage of variation in the independent variables used in the model that is able to explain the variation in the dependent variable. If R^2 equals 0, then there is no contribution of influence from the independent variables on the dependent variable. Conversely, if R^2 equals 1, then the percentage of influence from the dependent variable is perfect. The R^2 test (R-squared), which is the coefficient of determination, yielded a value of 0.699 or 60.99%. This indicates that the percentage contribution of the independent variables (land area, seeds, urea fertilizer, NPK fertilizer, KCL fertilizer, magnesium fertilizer, pesticides, and labor) to the

dependent variable (production) is 60.99%, while the remaining 30.01% is influenced by other factors outside the analyzed model.

Correlation analysis is used to determine the relationship between two or more independent variables ($X_1, X_2, X_3, X_4, X_5, X_6, X_7$, and X_8) and the dependent variable (Y) simultaneously. This coefficient indicates the strength of the relationship between the independent variables ($X_1, X_2, X_3, X_4, X_5, X_6, X_7$, and X_8) and the dependent variable (Y) simultaneously. The value of R ranges from 0 to 1; the closer the value is to 0, the weaker the relationship. Based on the table above, it can be seen that R , the correlation coefficient, is 0.836a or 83.60%. This indicates a very strong relationship between the independent variables: Land Area (X_1), Seeds (X_2), Urea Fertilizer (X_3), NPK Fertilizer (X_4), KCL Fertilizer (X_5), Magnesium Fertilizer (X_6), Pesticides (X_7), and Labor (X_8) with the dependent variable: Rice Farming Production of the Mustajab Variety (Y).

3.7 Simultaneous regression coefficient test (F-test)

This test is used to determine whether the independent variables ($X_1, X_2, X_3, X_4, X_5, X_6, X_7$, and X_8) collectively have a significant effect on the dependent variable (Y), or to determine whether the regression model can be used to predict the dependent variable. Significant means that the relationship that occurs can be applied to the population (can be generalized). Test the "F" statistic at a significance level using $\alpha = 0.05$ ($n-k-1$), then the results obtained for F_{table} are 2.29 and $F_{calculated}$ is 8.125. Thus, the value of $F_{calculated} > F_{table}$ ($8.125 > 2.29$), so accept H_a and reject H_0 , meaning there is a significant influence between Land Area (X_1), Seeds (X_2), Urea Fertilizer (X_3), NPK Fertilizer (X_4), KCL Fertilizer (X_5), Magnesium Fertilizer (X_6), Pesticides (X_7), and Labor (X_8) collectively on rice farming of the Mustajab Variety.

3.8 Partial regression coefficient (t-test)

This test is used to determine whether the independent variables ($X_1, X_2, X_3, X_4, X_5, X_6, X_7$, and X_8) in the regression model have a significant partial effect on the dependent variable (Y). From the regression analysis output, the partial values of each independent variable can be determined. It can be seen in [Table 10](#) above that the factors of land area (0.057), Seeds (0.560), Urea Fertilizer (0.484), NPK Fertilizer (0.994), KCL Fertilizer (0.962), magnesium fertilizer (0.428), Pesticides (0.750), and Labor (0.458) did not have a significant effect on the cultivation of Mustajab variety paddy fields, as indicated by the significance value (0.05).

4. Discussion

The cultivation of Mustajab rice variety is economically feasible, with an R/C ratio of 4.75, indicating that every Rp1 spent generates a return of Rp4.75. However, it is technically inefficient, as all tested production factors (land area, seeds, fertilizers, pesticides, and labor) showed no significant effect on yield. This inefficiency is attributed to unsuitable land conditions, particularly high soil pH levels (8–9), whereas the Mustajab variety thrives best at a pH of 5.5–6.5. It is recommended that farmers apply fertilizers containing sulfur or organic matter to reduce soil pH. There is also a need to evaluate the dosage and application methods of fertilizers and pesticides to ensure greater efficiency. Furthermore, farmers are encouraged to participate in technical training to enhance their knowledge in managing rice farming more effectively and sustainably.

5. Conclusion

The average production volume is 2,597 Kg/MT, with a selling price of 6,500/Kg, a production value of Rp.16,882,432/MT, production costs of 3,551,162/MT, and revenue received of Rp.13,331,270/MT. With an R/C ratio of 4.75, this indicates that for every 1 rupiah spent on

Mustajab variety paddy farming, 4.75 rupiahs in revenue will be generated. Therefore, it can be said that Mustajab variety paddy farming is feasible to cultivate because the ratio is >1 . The results of the technical efficiency analysis show that the production factors of Land Area (0.057), Seeds (0.560), Urea Fertilizer (0.484), NPK Fertilizer (0.994), KCL Fertilizer (0.962), Magnesium Fertilizer (0.428), Pesticides (0.750), and Labor (0.458) did not have a significant effect on the cultivation of Mustajab variety paddy fields, as indicated by the significance value (0.05). It turns out that based on the research conducted, Mustajab variety paddy is not technically suitable for agricultural land in Reuleung Geuleumpang Village because the soil pH in this research area ranges from 8-9, which is very good for paddy varieties other than Mustajab, while the Mustajab variety is designed for low pH.

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Authors' contributions and responsibilities

Meliyati: conceptualization, methodology, writing – original draft, supervision. Ainal Mardhiah: supervision, writing – review & editing. Khumaira: investigation, formal analysis, visualization.

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Availability of data and materials

All data are available from the authors.

Competing interests

The authors declare no competing interest.

Additional information

No additional information from the authors.

References

- [1] N. Marwin, W. A. Zakaria, and S. Situmorang, "Analisis efisiensi produksi dan pendapatan usahatani padi sawah di Kecamatan Balige Kabupaten Toba Samosir," *J. Ilmu-Ilmu Agribisnis*, vol. 8, no. 2, p. 212, 2021, doi: 10.23960/jiia.v9i2.5078.
- [2] A. Mardhiah, D. E. Puspita, R. Hayati, and Z. Fuadi, "Hubungan karakteristik sosial ekonomi dengan pendapatan petani pengguna teknologi rice transplanter di kecamatan," vol. 9, no. 1, pp. 194–204, 2025.
- [3] Khumaira, E. Hidayat, and A. Mardhiah, "Hubungan karakteristik petani terhadap persepsi dalam pemilihan komoditi kentang di Kecamatan Bebesen Kabupaten Aceh Tengah," vol. 9, no. 1, pp. 284–296, 2025.
- [4] W. R. Fery, "Peran produk teknologi isotop dan radiasi dalam meningkatkan produktivitas padi di Kecamatan Lakbok.," pp. 24–28, 2021.
- [5] A. Baihaqi, "Analisis Efisiensi teknis dan ekonomis usahatani padi sawah sistem tanam jajar legowo di Kecamatan Kramatwatu Kabupaten Serang," pp. 1–23, 2021.
- [6] U. Khasanah, "Pertumbuhan dan hasil padi varietas inpara 1 dan aksesi padi beras hitam

- serta upaya persilangannya,” 2020.
- [7] Z. Azalia, “Analisis pengaruh jumlah produksi beras, konsumsi beras, harga beras dalam negeri, kurs riil, Pdb Riil dan jumlah penduduk terhadap impor beras di Indonesia,” p. 6, 2021.
 - [8] P. Ahmad, R. Indriani, and Y. Boekoesoe, “Perbandingan pendapatan padi wasah dari anjan,” *Gorontalo. Univ. Negeri Gorontalo*, 2023.
 - [9] F. W. Murni, “Analisis produktivitas dan efisiensi usaha tani padi sawah di Desa Pematang Lalang Kecamatan Percut Sei Tuan Kabupaten Deli Serdang,” 2022.
 - [10] A. Arifin, A. A. Pata, A. Azisah, and M. A. Sadat, “Efisiensi dan kelayakan usahatani padi sawah tadah hujan Kabupaten Barru,” *Mimb. Agribisnis J. Pemikir. Masy. Ilm. Berwawasan Agribisnis*, vol. 9, no. 2, p. 1879, 2023, doi: 10.25157/ma.v9i2.10137.
 - [11] R. Cahyani *et al.*, “Mimbar agribisnis : jurnal pemikiran masyarakat ilmiah berwawasan agribisnis efisiensi teknis usahatani kentang di Desa Sarimukti Kecamatan Pasirwangi Kabupaten Garut Technical Efficiency of Potato Farming in Sarimukti Village Pasirwangi Subdistrict Garut,” vol. 10, pp. 2890–2897, 2024.
 - [12] N. Fuadiha, “Analisis pendapatan usahatani padi di Desa Wele’ Kecamatan Belawa Kabupaten Wajo,” pp. 1–64, 2022.
 - [13] O. Lukiana, N. Darna, and dan A. Muhidin, “Job Rotation,” *Pengaruh job rotat. dan job enlarg. terhadap kepuasan kerja (suatu stud. pada badan pengelolaan keuangan. Drh. Kabupaten Ciamis)*, vol. 2, pp. 1–1, 2020.
 - [14] J. Ahmad, F. Firdaus, and S. Syarifuddin, “Analisis pendapatan dan kelayakan usaha minyak nilam di Kecamatan Kluet Tengah Kabupaten Aceh Selatan,” *J. Hum. J. Ilmu Sos. Ekon. dan Huk.*, vol. 7, no. 1, pp. 73–84, 2023, doi: 10.30601/humaniora.v7i1.3956.
 - [15] F. Zaifah, “1.5.3 Analisis efisiensi teknis dan ekonomis penggunaan faktor-faktor usahatani padi di Desa Burneh, Kecamatan Burneh, Kabupaten Bangkalan,” vol. 7, pp. 57–69, 2022.
 - [16] A. Adhiana, R. Riani, and D. A. Fristy, “Analisis efisiensi teknis usaha tani padi sawah (oriza sativa l.) di Kecamatan Pematang Bandar Kabupaten Simalungun,” *J. Agrisep*, vol. 22, no. 2, pp. 1–12, 2021, doi: 10.17969/agrisep.v22i2.23067.
 - [17] Sarwedi, “Analisis efisiensi teknis penggunaan faktor produksi padi sawah tadah hujan (studi kasus di Desa Setiris Kecamatan Maro Sebo Kabupaten Muaro Jambi),” 2021.
 - [18] M. Gultom, “Karakteristik petani padi sawah di Desa Wonosari Kecamatan Tanjung Morawa Kabupaten Deli Serdang Provinsi Sumatera Utara,” 2022.
 - [19] T. Pakpahan, “Analisis luas lahan minimum untuk peningkatan Universitas Medan Area Kessejahteraan Petani Padi Sawah, di Desa diajukan sebagai salah satu syarat untuk memperoleh gelar sarjana di Program Studi Agribisnis Fakultas Pertanian Universitas Medan Area,” 2023.
 - [20] R. S. Mahbub, “Pengaruh biaya produksi dan biaya operasional terhadap peningkatan laba Pt Mayora Indah Tbk Tahun 2018-2022,” no. Table 10, pp. 4–6, 2024.
 - [21] Ikrawati, “Program Studi Agribisnis Fakultas Pertanian Universitas Muhammadiyah Makassar 2024 analisis faktor yang berpengaruh terhadap produksi usahatani padi di Lahan Sawah Tadah Hujan di Desa Binanga Karaeng Kecamatan Lembang Kabupaten Pinrang,” 2024.