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DEVELOPMENT STRATEGIES OF PADDY DAYANG RINDU VARIETY AT MUSI RAWAS REGENCY

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ABSTRACT

This research aims to analyze the appropriate strategy to be used by Paddy Dayang Rindu farmers in Musi Rawas Regency in rice farming and at the same time analyze the influence of production factors on production results. This research uses qualitative analysis techniques in the form of SWOT analysis and quantitative analysis techniques in the form of multiple regression analysis. The research results show that the average total income earned by farmers is 68.5 million rupiah in one production period. The results of multiple regression analysis show that the pesticide variable has an insignificant and negative influence. The seed variable has a positive but not significant effect, while the land area, fertilizer and labor variables have a positive and significant effect on the production results of dayang rindu longing. The results of the SWOT analysis place the Dayang Rindu rice farming business in Quadrant I, which means the strategy to be used is to strengthen internal advantages by optimizing land use to increase productivity levels. Another strategy is to build collaboration with local governments and financial institutions to open opportunities and create capabilities in marketing agricultural products.

KEYWORDS *Paddy Dayang Rindu, Rice Farming, Development Strategy of Production, SWOT Analysis, Production Factors*

INTRODUCTION

Agriculture plays an important role in meeting the food needs of the population as well as a source of livelihood for most people in Indonesia. One of the agricultural commodities that has a strategic role is rice, as a staple food for most of the Indonesian population. The demand for rice continues to increase as the population grows, so the development of rice production is very important to ensure the sustainability of the national food supply. Rice commodities have long been an indicator of Indonesia's economy. This means that the price of rice is a reflection of a country's ability to manage its economy. Rice production management has an influence on consumption management and has an impact on other sectors. In addition, rice production management also has an influence on consumption management and has an impact on other sectors. The development of rice

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production not only affects the agricultural sector, but also plays an important role in overall economic stability (Malia et al., 2021).

Rice development using local varieties in addition to superior varieties is one of the commonly used approaches in efforts to increase rice production that has characteristics in an area. Local varieties are varieties that have existed naturally in a region or were developed through natural selection or artificial selection by local farmers over the years. The use of local varieties of rice has several advantages, including; (1) resilience to local conditions; (2) local varieties are generally more resistant to climatic conditions, diseases, and pests specific to a particular region; and (3) genetic diversity (Anggia, 2018; Anita et al., 2011).

Over the past few decades, with advances in crop breeding technology, attention to local varieties of rice has increased. Many research institutions and agricultural organizations are working to collect, conserve, and develop local rice varieties that have superior traits such as high yields, disease resistance, and adaptation to climate change.

The development of local rice varieties continues with the aim of increasing production, food security, and farmers' welfare. Conservation of local rice genetic diversity is also an important concern in efforts to maintain the sustainability of agrobiodiversity. This development is carried out in several rice producing areas that have the potential for local varieties that have characteristics and are liked by consumers, one of which is in Musi Rawas Regency which is a rice producing area in South Sumatra.

Musi Rawas Regency, located in South Sumatra Province, has great potential in the development of rice production. This village has geographical and climatic conditions that are very suitable for the growth of superior rice varieties and local rice, especially the Dayang Rindu variety. The Dayang Rindu variety is a variety developed through a rice breeding program and has high potential in terms of yield and quality. The development of agribusiness of the Dayang Rindu variety of rice in Musi Rawas Regency has a positive impact on increasing farmers' income, reducing dependence on rice imports, and increasing food security at the local and national levels (Safriyani et al., 2022).

According to Wisnu (2013), Musi Rawas Regency is an area that has several varieties of gogo rice, one of which is famous is the Dayang Rindu Variety because it has a fragrant aroma. The Dayang Rindu variety is a local rice variety in Musi Rawas Regency that grows well in Musi Rawas Regency with a delicious, fluffy, and aromatic rice taste. Dayang Rindu rice is very popular with various circles of people not only in Musi Rawas Regency but also in various regions in South Sumatra Province and its surroundings, therefore the price of Dayang Rindu rice becomes more expensive than the price of ordinary rice. Although the demand for Dayang Rindu rice is high with a high selling price, not many farmers are willing to plant it due to various obstacles, especially its very deep lifespan reaching more than 140 days, easily collapsing because the stem is too high to reach 177 cm and low production. Through the collaboration of the Musi Rawas Regency Government, Musi Rawas University and BATAN (National Nuclear Energy Agency) the improvement of the Dayang Rindu variety was carried out with the main goal of getting a more robust variety, shorter stems so that they do not collapse easily and higher productivity with the same rice taste and aroma as the Dayang Rindu variety.

Variety improvement was carried out through mutation breeding using gamma ray irradiation at a dose of 300 Gy. Based on the results of the test as described in this proposal, 10 strains of hope were obtained that were more mature, higher productive, shorter stems and the taste and aroma of rice were the same or close to the taste and aroma of the Dayang Rindu variety, Of the 10 strains, the 2 best strains, namely DR-06 and DR-10 were proposed to be released as superior varieties specific to the Musi Rawas area (Hendriadi, 2021).

The advantages of the proposed strain are a longer lifespan, shorter stems, higher productivity and better rice milling quality than the original variety Dayang Rindu, while the shape of the grain and rice as well as the taste and aroma of rice are similar to Dayang Rindu (Hoesain et al., 2020). In addition, the proposed strains DR-06 and DR-10 also have resistance to blast disease and bacterial leaf blight pathotype III. Based on various advantages, the two strains, DR-06 and PY-10, are considered worthy of being released as superior varieties in the Musi Rawas Regency area.

The purpose of the release of the mutant strain of hope proposed is to get varieties that are mature, have high productivity, shorter stems so that they do not collapse easily and the taste and aroma of rice are the same as the original variety Dayang rindu (Ira & Puspitasari, 2021).

The benefit of the release of the mutant strain of hope proposed as a new superior variety specific to the location of Musi Rawas Regency will increase the diversity of superior rice varieties in Musi Rawas so as to provide a wider alternative for farmers in choosing varieties that suit the tastes of the people of Musi Rawas Regency and its surroundings. Another benefit is that it will be able to strengthen the rice cultivation system in Musi Rawas Regency with the availability of superior varieties of high-quality and high-yielding rice.

Dayang Rindu is a rice variety that has several advantages and characteristics. First, this variety is resistant to rice pests and diseases such as blast, leafhoppers, and stem borers. In addition, Dayang Rindu has a high yield power, reaching 8.5 tons per hectare. The variety is also resistant to drought and rat pest attacks. The harvest period of Dayang Rindu is relatively short, around 110-115 days after planting. This plant can grow tall, reaching 100-125 cm, with an average number of productive saplings of 12-14 fruits per sapling and an even distribution of saplings (Sakina, 2020). The leaves and stems are strong and resistant to wilting during the growing period. In addition, Dayang Rindu has a balanced vegetative and generative period, making it suitable for the cultivation of rice in one land. The rice produced by Dayang Rindu is of good quality, pure white and has good water absorption. Dayang Rindu needs enough fertilizer and nutrients to achieve maximum yield potential. This variety is also tolerant of 60-70% shade and is very suitable for planting in the rainy season (Gumilar et al., 2020). Because of the superiority of Dayang Rindu Rice, it is what makes Dayang Rindu Rice the focus to be developed by the Musi Rawas Regency Superior Seed Center by making the Tugumulyo and Purwodadi Districts as the center for the development of Dayang Rindu Rice varieties (Musriadi, 2021)

In addition, according to Sobrizal (2016), the Dayang Rindu Rice variety has a distinctive characteristic, namely a fluffy and soft rice texture, with a distinctive pandan aroma and good taste. However, despite having great potential, the development of the Dayang Rindu rice variety still faces various challenges and obstacles that need to be handled effectively. Some of the challenges faced include low access to financing, lack of knowledge and skills in agribusiness management, and obstacles in the development and distribution of crop yields. Another challenge is the problem of developing and distributing crops (Tyas et al., 2022). Farmers face difficulties in selling their crops at favorable prices. Lack of market access and capital for supply chain development and inadequate development infrastructure hinder farmers in obtaining maximum profits from their businesses (Adriansyah et al., 2018).

The condition of the development of the Dayang Rindu rice variety in Musi Rawas Regency needs to be further studied to identify the factors that affect the success of its production development. In addition, the formulation of the right strategy is needed to overcome the existing challenges and obstacles, as well as maximize the potential for the development of rice production of the Dayang Rindu variety in Musi Rawas Regency (Lesmana, 2024).

Previous research has examined several aspects related to the development of rice production, but research that specifically focuses on the development of rice production of the Dayang Rindu variety in Musi Rawas Regency is still limited (Anton & Marhawati, 2016). Therefore, this study aims to formulate a strategy for the development of rice production of the dayang rindu variety in this region based on the factors that affect it and the existing conditions that farmers are now doing.

The results of this study are expected to be the basis for making the right decisions in the development of rice production of the Dayang Rindu variety in Musi Rawas Regency, as well as providing strategic recommendations to stakeholders to increase productivity and sustainability of the development of the rice variety. The formulation of the problems that will be studied in this study includes: (1) how the Dayang Rindu variety rice farming is carried out by farmers in Musi Rawas Regency at present, (2) how much is the income of Dayang Rindu variety rice farming, (3) what factors affect the production of Dayang Rindu variety rice cultivated by farmers in Musi Rawas Regency, and (4) what strategies can be carried out for the development of Dayang Rindu variety production in Musi Rawas Regency. The objectives of this study are to (1) describe the Dayang Rindu rice farming cultivated by farmers in Musi Rawas Regency, (2) calculate the income of Dayang Rindu rice farming, (3) analyze the factors affecting the production of Dayang Rindu rice, and (4) formulate a strategy for the development of Dayang Rindu rice production in Musi Rawas Regency.

RESEARCH METHOD

This research was conducted in Tugumulyo District and Purwodadi District, Musi Rawas Regency, which was chosen because these two sub-districts are areas developed by the government for the cultivation of rice varieties of the Dayang Rindu variety, with many farmers still cultivating local varieties of rice plants (Azwar, 2014). The research implementation time will take place in July 2023 until completion. The research method used is a quantitative method with a survey type of research. This quantitative method based on the philosophy of positivism is used to research a specific population or sample, with data collection through research instruments and statistical analysis to test hypotheses (Hendayana, 2011). The sample was drawn by the total sampling method, where the entire population of 42 Dayang Rindu rice farmers in Tugumulyo and Purwodadi Districts was used as a research sample, considering the relatively small number of farmers.

RESULT AND DISCUSSION

The Use of Production Factors in Dayang Rindu Rice Farming

Agricultural productivity data involving land area, labor, seeds, fertilizers, pesticides, and production provide an in-depth view of agricultural conditions in a region. This analysis can help identify factors affecting productivity, provide insights for better agricultural policies, and guide efforts to improve efficiency in the sector.

Table 1. Average Use of Dayang Rindu Rice Production Factors in Musi Rawas Regency

Production Factors	**Unit**	**Average**
Land	Ha	1.00
Workforce	HoK	162.61
Seed	Kg	18.93
Urea Fertilizer	Kg	200.00
NPK Fertilizer	Kg	150.00
SP3 Fertilizer	Kg	50.00
Spontaneous Pesticides	Ml	2000.00
Topsin Pesticides	Ml	4800.00
Roasted herbised	Ml	2000.00
Production	***Kg***	***4850.68***

Source : Questionnaire Research Results, data processed (2023)

First of all, land area is a critical factor in determining agricultural production capacity. With an average land area of 1 hectare, we can evaluate the efficiency of land use by farmers. This factor is related to the question of optimizing land use, whether farmers have maximized the potential of their land or whether there are opportunities for expansion or diversification of agricultural businesses. This analysis can provide information to the government or relevant institutions to design agricultural policies that support sustainable land management.

Labor is another important indicator, with an average of 162 HoK (Working People's Day) per hectare. This reflects the level of work intensity in the agricultural sector. Increased labor productivity can be achieved through the introduction of more efficient agricultural technologies or through training and education that improves farmers' skills. Government or private sector support in the provision of technology and training can help improve farmers' efficiency and well-being.

Seeds, fertilizers, and pesticides are other elements in the agricultural production chain. An average of 18 kg of seeds, 200 kg of urea fertilizer, 150 kg of NPK fertilizer, 50 kg of SP3 fertilizer, 2,000 ml of spontaneous pesticides used to deal with leafhopper pests, 4,800 ml of topsin pesticides used to protect rice from blast disease, leaf spot, broken neck so that crop yields can be higher and 2,000 ml of herbicides used to control weeds. This analysis can evaluate the efficiency of using these inputs. Questions may include whether there is a tendency to overuse inputs or whether organic or sustainable technologies can be implemented to reduce reliance on chemical pesticides. Efforts to reduce the excessive use of pesticides and fertilizers can bring long-term benefits to environmental health and farmers' well-being. It is important to understand that the use of large amounts of pesticides can have a negative impact on the environment and human health. Therefore, considering more environmentally friendly alternatives or implementing sustainable farming practices is an important step to maintain the balance of agricultural ecosystems.

Furthermore, when viewed in Table 2, the average rice production of Dayang Rindu Rice is 4,850 kg of rice per hectare, providing the final measure of agricultural productivity. This analysis can help assess the effectiveness of the entire production cycle and the efficiency of the use of inputs used in the production process in Dayang Rindu in Musi Rawas Regency. If production levels are low, there are questions about what can be improved in agricultural management, from seed selection, fertilizer use, to the application of better irrigation techniques.

The possibility to increase production may also involve diversifying crops or applying modern agricultural technologies. Weather variability and climate change can affect agricultural yields, and therefore, solutions that focus on adaptation to climate change also need to be considered.

Income Analysis of Dayang Rindu Rice Farming Variestas

The processing process of Dayang Rindu Rice is the same as the rice processing process in general, namely going through a series of processes that directly involve production factors which are then recognized as production costs. The variable costs and fixed costs in this study are as follows:

Table 2. Variable Cost and Fix Cost in Dayang Rindu Rice Production in Musi Rawas Regency

Komponen Biaya		Harga Perolehan	Masa Manfaat		Jumlah
A. Biaya Tetap					
-Penyusutan Alat Tanam	Rp	7,000,000	60 Bulan	Rp	700,000
-Cangkul	Rp	85,000	36 Bulan	Rp	14,167
-Cultivator	Rp	6,650,000	60 Bulan	Rp	665,000
-Kored	Rp	10,000	24 Bulan	Rp	2,500
-Sprayer	Rp	245,000	36 Bulan	Rp	40,833
-Sewa Lahan	Rp	-	-	Rp	3,780,000
Total	Rp			Rp	5,202,500
B. Biaya Variabel					
-Benih				Rp	2,660,000
-Pupuk Urea				Rp	2,880,000
-Pupuk NPK				Rp	2,700,000
-Pupuk SP3				Rp	350,000
-Pestisida Spontan				Rp	750,000
-Pestisida Topsin				Rp	250,000
-Pestisida Herbisida				Rp	135,000
-Tenaga Kerja				Rp	15,250,000
Total				Rp	24,975,000
Grand Total				Rp	30,177,500

Processed directly by researchers
Source : Field Data, processed (2023)

Table 2 shows the specifications of the costs incurred in dayang rice farming in Musi Rawas Regency. The cost incurred for fertilizer purchases is the second largest after labor costs when compared to other costs. The average farmer spends 5.9 million Rupiah on fertilizer purchases. This is because fertilizers can provide essential nutrients needed by rice plants so that they can grow optimally and productively. In addition, fertilizers can also contribute to improving soil quality so that the quality and nutrients of the land used are maintained. In addition, another cost incurred by farmers is the purchase of pesticides with an average cost of Rp 1.1 million. To maintain good crop quality, farmers must not only ensure that the nutrition of rice plants is met, but also must be able to control pests and diseases that can damage rice plants so that they can interfere with the productivity of rice plants. However, the cost incurred by farmers for the purchase of pesticides is not as large as the cost incurred for the purchase of fertilizers, this is because the use of pesticides is not intense and depends more on the level of pest or disease infestation.

Labor costs are one of the important components in the analysis of production costs, especially in the agricultural sector. In the production process of the Dayang Rindu variety of rice, labor costs include various activities ranging from land preparation, planting, maintenance, to harvesting. Land preparation is an initial stage that requires significant labor. These activities include plowing, initial irrigation, and basic fertilization. In a study conducted by Purnomo (2018), labor costs for land preparation can reach 20% of the total production cost. This is due to the need for intensive labor and the involvement of heavy equipment that requires trained operators.

After the preparation of the land is completed, the planting stage begins. Rice planting of the Dayang Rindu variety is usually done manually or using a rice planting machine. Labor costs at this stage include wages for workers who plant and maintain seedlings until they are ready for planting. Labor costs at this stage are influenced by the planting method used, where manual planting tends to require higher costs compared to planting using machines.

The maintenance stage includes embroidery, weeding, fertilizing, and pest control activities. These activities require an experienced workforce to ensure optimal growth of rice plants. In a study conducted by Sutrisno (2019), labor costs at the maintenance stage can reach 30% of the total production labor costs. Embroidery, or replacing dead seedlings, requires a lot of precision and time, while weeding also requires intensive labor.

Harvesting is the final stage which also requires a lot of labor. In a study by Wibowo (2020), labor costs at the harvest stage reached 25% of the total labor cost. These activities include cutting rice, transporting crops to drying grounds, and separating grain from straw. More modern harvesting technologies such as the use of rice harvesting machines can reduce labor costs, but not all farmers have access or ability to use such technology.

Land lease is one of the significant fixed cost components. Farmers who do not own their own land must pay rent to the land owner. The cost of renting land is determined by several factors such as location, land quality, and rental duration. According to research by Susanti (2016), land rental costs can reach 10-15% of the total production cost. For land with good irrigation and close to agricultural infrastructure, the rental cost tends to be higher compared to less supportive land. The average land rental cost incurred by Dayang Rindu Rice farmers in Tugumulyo and Purwodadi Districts is Rp 3,780,000 during one production period where the average land rental cost incurred by farmers every month is Rp 630,000 per hectare.

Depreciation is the decline in the value of tools and machines with use and time. In rice production, tools and machines such as tractors, milling tools, and dryers are important assets that require fixed costs in the form of depreciation. This depreciation cost must be taken into account in the annual budget to ensure that there are sufficient funds to replace or repair damaged tools and machinery. The depreciation cost of the tools used in the series of Dayang Rindu Rice farming processes in Tugumulyo and Purwodadi Districts is Rp 5,202,500 in one production period or Rp 867,083 per month for all fixed cost facilities used.

Table 3. Average Production Value and Revenue of Dayang Rindu Rice Farming in Musi Rawas Regency

Variable	Unit	Average Price (Rp/Kg)	Average Rice Production (Kg)	Total Revenue (Rp)
Dayang Rindu Rice Production	Kg of Rice	16,000	4,851	77,616,000

Source : Field data, processed. (2023)

The table above shows a summary of the field data that has been obtained from Dayang Rindu Rice farmers where *total revenue* from the results of Dayang Rindu Rice farming in two research areas, namely Tugumulyo District and Purwodadi District, it was Rp 77.6 million with the selling price at the time of the study was Rp 16,000 per kilogram and the average per production was 4,851 kg of rice or 7.76 1.6 Kg if calculated in grain form.

Table 4. Average Income of Dayang Rindu Rice Farming in Musi Rawas Regency

Variable	Unit	Average Acceptance	Average Cost of Farming	Total Revenue (Rp)
Dayang Rindu Rice Production	Rp	77,616,000	30,177,500	47,438,500

Source : Field data, processed. (2023)

Table 4 provides an overview of the average income received by Dayang Rindu Rice farmers in Tugumulyo and Purwodadi Districts in one production. If converted to income every month, an average of Rp 7,906,417 per month is obtained per Dayang Rindu Rice farmer.

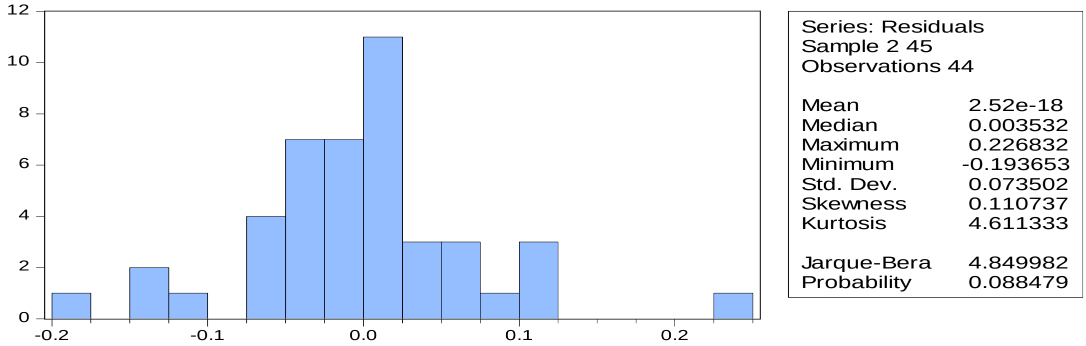
The results of the analysis of factors affecting the production of rice varieties of Dayang Rindu cultivated by farmers in Musi Rawas Regency.

Results of the Classic Assumption Test

Classical assumption tests are a series of statistical analyses used to test whether the data used in a model or analysis meets certain classical assumptions. Based on the questionnaire data that has been processed, tests are carried out on classical assumptions to ensure that the research data is valid for statistical tests and minimize bias.

Normality Test

The normality test is a statistical tool used to evaluate the success of data in meeting the assumptions of normal distribution. Figure 1 shows the data normality graph in this study



Sumber : Eviews 12.0

Figure 1. Normality Test Diagram

Based on the results of the Normality test, the results of Prob. Jarque Bera of 0.088 is greater than the significance value of 0.05 so it can be concluded that the research data is distributed normally.

Heterogeneity Test

Heterokedasticity testing is performed to see if the error variance in the statistical model is not constant along the range of independent values or predictor variables.

Table 5. Heterokedasticity Test Results

Heteroskedasticity Test: BreuschPagan-Godfrey			
F-statistic	1.475624	Prob. F(5,39)	0.2199 Significant
ObsR-squared	7.158881	Prob. Chi-Square(5)	0.2091 Significant
Scaled explained SS	10.98890	Prob. Chi-Square(5)	0.0516 Significant

Sumber : Eviews 12.0

Based on the results of the heterokedasticity test on the research data, the Prob value was obtained. F Statistic of 0.2199 is greater than the significance value of 0.05 so that it can be said that the variables in the research model are feasible and free from errors.

Multicollinearity Test

To see if there is a relationship between independent variables, a statistical test called the Multicollinearity test is carried out. Variables are said to have a high correlation relationship with other variables if the value of *Centered VIF* is greater than 10. Table 6 shows the test results Table

Table 6. Heterokedasticity Test Results

Variance Inflation Factors
Date: 12/25/23 Time: 17:41
Sample: 1 45
Included observations: 45

Variable	Coefficient Variance	Uncentered BRIGHT	Centered BRIGHT	Description
C	1.051896	19070.32	NA	Unbound
PESTICIDES	0.001621	1977.867	1.848552	Unbound
LUAS_LAHAN	0.000388	5.545750	1.330280	Unbound
BENIH	0.003803	593.4360	1.708528	Unbound
FERTILIZER	0.003485	1944.443	2.614592	Unbound
TENAGA_KERJA	0.044408	20863.78	1.470745	Unbound

Sumber : Eviews 12.0

Based on the results of the Multicollinearity test, the Centered VIF value of each independent variable is less than 10 so that it can be concluded that the five independent variables in the study are free of Multicollinearity.

Multiple Regression Estimation Results

After going through a series of classical assumption tests and the data and research variables have passed all the classical assumption tests in question, the results of the multiple regression estimation are valid to be read and analyzed. Table 7 shows the results of multiple regression estimas.

Table 7. Multiple Regression Estimation Results

Dependent Variable: PRODUCTION
Method: Least Squares
Date: 07/21/24 Time: 17:28
Sample: 1 42
Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.487692	1.025620	4.375590	0.0001
PESTISIDA_HERBI	-0.007643	0.040257	-0.189854	0.8504
PESTISIDA_SPONTAN	0.082772	0.122827	0.252992	0.0829
PESTISIDA_TOPSIN	0.091881	0.188161	1.872882	0.6181
LUAS_LAHAN	0.061340	0.019691	2.115058	0.0034

BENIH	0.042748	0.061672	0.693153	0.4923
PUPUK_NPK	0.206326	0.059030	3.495268	0.0012
PUPUK_SP3	0.781991	0.917199	1.817171	0.0060
PUPUK_UREA	0.919811	0.218181	3.177211	0.0011
TENAGA_KERJA	0.538569	0.210731	2.555719	0.0146

R-squared	0.717419	Mean dependent var	8.483239
Adjusted R-squared	0.681190	S.D. dependent var	0.088236
S.E. of regression	0.049821	Akaike info criterion	-3.037189
Sum squared resid	0.096804	Black criterion	-2.796300
Log likelihood	74.33675	Hannan-Quinn criter.	-2.947388
F-statistic	19.80267	Durbin-Watson stat	2.541633
Prob(F-statistic)	0.000000		

Sumber : Eviews 12.0

Based on the regression results, the equation of this research model can be compiled as follows:

Y = 4.488 + (-0.008X1.1) + 0.083X1.2 + 0.092X1.3 + 0.061X2 + 0.0.43X3 + 0.206X4.1 + 0.782X4.2 + 0.919X4.3 + 0.539X5 + *ei*

The table above shows in detail the regression results which also show the influence of each independent variable on the bound variable. The variable coefficient of Herbal Pesticides was -0.007. This value shows that each unit increase in the level of pesticide use is related to a decrease of around 0.007 units in the production of Dayang Rindu rice. However, a coefficient significance of 0.8504 indicates that this influence is not statistically significant. In contrast to the results of the coefficients of Spontaneous and Topsin pesticides which each have positive values with coefficients of 0.083 and 0.092 respectively, the significance figures show that these two variables do not give a significant amount to the production variables.

The variable coefficient of land area was 0.06, and the significance was 0.0034. This shows that each unit of increase in land area is related to an increase of around 0.06 in the production of Dayang Rindu Rice. The high significance value of the land area variable indicates that the land area variable is statistically significant in influencing the Dayang Rindu Rice production variable.

The coefficient of the seed variable was 0.04 with a significance of 0.4923. This result shows that the influence of seeds on the dependent variable is not statistically significant at the predetermined significance level of 0.05. The variable coefficient of NPK fertilizer is 0.206, and its significance is 0.0012. This means that each unit of increase in the use of NPK fertilizer is related to an increase of around 0.206 units of Dayang Rindu Rice production. The high significance shows that the NPK fertilizer variable has a significant influence on the production variable. In addition, the variables of SP3 fertilizer and Urea fertilizer also showed a significant influence on the production of dayang rindu rice with the coefficient values of each variable being 0.782 and 0.919 which means that every 1 percent increase in the volume of SP3 fertilizer use will have an impact on the increase in dayang rindu rice production by 0.782 kg and so with Urea fertilizer.

The variable coefficient of Labor is 0.54 with a significance of 0.0146. These results indicate that labor use has a significant influence on the dependent variable, and each unit of labor increase is related to an increase of about 0.54 units in production output.

T Test Results

The T test is useful to find out how much influence each variable has on the free variable. Table 8 provides an interpretation of the influence of each of the independent variables in this study.

Table 8. The Effect of Each Independent Variable on the Variable of Dayang Rindu Rice Production

Dependent Variable: PRODUCTION
Method: Least Squares
Date: 07/21/24 Time: 17:28
Sample: 1 42
Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.487692	1.025620	4.375590	0.0001
PESTISIDA_HERBI	-0.007643	0.040257	-0.189854	0.8504
PESTISIDA_SPONTAN	0.082772	0.122827	0.252992	0.0829
PESTISIDA_TOPSIN	0.091881	0.188161	1.872882	0.6181
LUAS_LAHAN	0.061340	0.019691	2.115058	0.0034
BENIH	0.042748	0.061672	0.693153	0.4923
PUPUK_NPK	0.206326	0.059030	3.495268	0.0012
PUPUK_SP3	0.781991	0.917199	1.817171	0.0060
PUPUK_UREA	0.919811	0.218181	3.177211	0.0011
TENAGA_KERJA	0.538569	0.210731	2.555719	0.0146

Sumber : Eviews 12.0

Based on the table above, it can be seen that the independent variables that have a significant influence on the production of Dayang Rindu Rice are the variables of land area, fertilizer and labor, while the pesticide variables and seed variables do not have a significant effect on the variables of Dayang Rindu Rice production.

Test Result F

If the T test is carried out to see how much the influence of each independent variable on the bound variable, then the F test is carried out to see how much the influence of the independent variable as a whole on the bound variable.

Table 9. The Effect of Independent Variables on the Variables of Dayang Rindu Rice Production

R-squared	0.717419	Mean dependent var	8.483239
Adjusted R-squared	0.681190	S.D. dependent var	0.088236
S.E. of regression	0.049821	Akaike info criterion	-3.037189

Sum squared resid	0.096804	Black criterion	-2.796300
Log likelihood	74.33675	Hannan-Quinn criter.	-2.947388
F-statistic	19.80267	Durbin-Watson stat	2.541633
Prob(F-statistic)	0.000000		

Sumber : Eviews 12.0

The regression results above show the Prob value. F Statistics of 0.00000 <0.05 from the significance level which means that together the independent variables consisting of pesticides, land area, labor, fertilizer and seeds have a significant influence on the bound variable, namely the production of Dayang Rindu Rice.

R-Squared Test Results

The R-Squared test was carried out to see how much influence the independent variable had on the bound variable. Table 10 shows the regression output results which can then interpret the magnitude of the influence of the independent variable on the bound variable in this study.

Table 10. The Effect of Independent Variables on the Variables of Dayang Rindu Rice Production

R-squared	0.717419
Adjusted R-squared	0.681190

Sumber : Eviews 12.0

The S-squared value in the study was 0.7174 or 71.74 percent which means that the five variables included in this research model as a whole had an influence of 71.74 percent on the production of Dayang Rindu Rice. The remaining 28.26 percent was influenced by other variables that were not included in the research model such as soil quality, irrigation system and other variables.

Formulation of a Strategy for the Development of Rice Production of the Dayang Rindu Variety in Musi Rawas Regency Using SWOT Analysis

The formulation of the Dayang Rindu variety rice production development strategy in this study uses a SWOT analysis, which provides an overview of the strengths, weaknesses, opportunities, and threats faced by farmers in Musi Rawas Regency. This analysis includes internal aspects, such as human resources, superior seeds, legowo planting systems, as well as support from farmer groups and agricultural extension workers. On the other hand, the weaknesses faced include a lack of access to capital, limited marketing places, and some farmers who have not followed the directions of extension workers. Using the internal factor matrix (IFAS), the weight, rating, and total value for each factor can be analyzed and calculated, providing a basis for further planning and development of strategies to optimize the existing potential and overcome the weaknesses faced in helping to increase the productivity and welfare of farmers in this sub-district.

SWOT Analysis: Position-Based Development Strategies in the SWOT Quadrant

SWOT analysis is an important tool to formulate a strategy for developing rice production of the Dayang Rindu variety, by identifying the strengths, weaknesses, opportunities, and threats faced by farmers. Based on this analysis, a production development strategy can be designed. The SO (Strengths-Opportunities) strategy focuses on utilizing internal strengths to seize external opportunities. Some of the strategies that can be implemented include: (1) Optimization of Agricultural Technology, by utilizing farmers' experience and adequate irrigation infrastructure to adopt the latest agricultural technology, as well as government support in the form of subsidies and technical training. (2) Market Development and Distribution, by utilizing the high rice production and superior quality of the Dayang Rindu variety, as well as the potential for wider market access through digital platforms and e-commerce.

By implementing this WT strategy, farmers can reduce the impact of existing internal weaknesses by taking advantage of opportunities to mitigate external threats faced. Diversification of resource use, improvement of human resource quality, institutional and network development, technological innovation and risk management, as well as strengthening branding and marketing will be key in increasing farmer resilience and developing sustainable and competitive rice production of the Dayang Rindu variety in local and regional markets.

(IFE) IFE (EFE)	**Strength (S)**	**Weakness (W)**
	1. The existence of human resources in rice farming. 2. The existence of superior seeds of assistance from the government 3. Increasing rice production 4. Farmers use the legowo planting system 5. The assistance of tractor machines and rice threshing machines to farmers by farmer groups 6. There are many directions from agricultural extension workers	1. The absence of banks or cooperatives as capital for farmers in rice farming 2. Marketing is still limited 3. There are some farmers who still do not follow the directions of the extension workers 4. There is no grain milling 5. There are no cooperatives that accommodate the production of rice farming
Opportunities (O)	**S-O Strategy**	**W-O Strategy**
• Development of agricultural technology 1. The support of the	• Leveraging the farmers' long experience and adequate irrigation infrastructure to adopt the latest agricultural	• Overcome network limitations by building strong partnerships with research institutions and

local government related to rice farming 2. Increasing public demand related to food 3. Facilities and infrastructure are easy to get 4. There is an understanding of farmers related to rice agribusiness	technologies. • Using high rice production and superior quality of the Dayang Rindu variety to meet the high market demand. • Using farmers' adaptability to local conditions and the availability of large land for diversification of agricultural products. • Leverage the strength of solid farmer groups and support from local governments to establish partnerships with research institutes and universities. • Using the dedication and experience of farmers as the basis for SWOT Analysis: Position-Based Development Strategies in the SWOT Quadrant increases the capacity of human resources.	universities. • Overcoming limited access to capital by utilizing government support in the form of subsidies and technical assistance. • Overcoming limitations in product diversification by developing processed rice products such as brown rice, glutinous rice, and other organic products. • Addressing challenges in agricultural sustainability by adopting sustainable farming practices. • Overcoming limitations in managerial capacity by participating in agricultural business management training.
Threats (T) 1. Weather conditions that are sometimes less supportive that make production decrease 2. The number of rice producers makes the price of rice cheap 3. Transportation that has not yet supported 4. There is a pest attack that attacks rice plants	• S-T Strategy • Utilizing high rice production strength and superior quality to diversify income sources. • Using the strength of adequate irrigation infrastructure and long experience in rice cultivation to increase agricultural technology capacity. • Leveraging the strength of solid farmer groups and government support to strengthen institutions and networks. • Harness the power of awareness of the importance of sustainable agricultural practices and the availability of environmentally friendly technologies to improve agricultural sustainability. • Utilizing the power in producing products with high added value	**W-T Strategy** • Overcoming the limitations of agricultural land by diversifying the use of resources. • Overcoming weaknesses in managerial skills by improving the quality of human resources. • Addressing weaknesses in the institutional structure by developing stronger institutions in product management and marketing. • Addressing weaknesses in technology investment by adopting agricultural technology innovations that can improve efficiency and productivity. • Addressing weaknesses in

	and the power in branding to innovate in products and marketing.	branding and marketing strategies by strengthening local product branding and the use of social media as a promotional tool.

Based on the results of the SWOT analysis which shows that Dayang Rindu Rice farming is in Quadrant I and the regression results indicate that the variables Land Area, Fertilizer, and Labor have a significant influence on production output, the rice production development strategy must be designed holistically with a focus on strengthening internal advantages and utilizing external opportunities. The first strategy is the strengthening of internal advantages, which can be done by optimizing the use of land area, namely through the identification of untapped land development potential, land mapping to find areas with high productivity, and the application of efficient agricultural practices to maximize yields per hectare. In addition, increasing the efficiency of fertilizer use can be done by analyzing plant nutrient needs to determine the right dosage, as well as the application of organic and biological fertilizer technology to improve soil health. Agricultural extension workers also need to improve farmers' understanding and skills in running optimal farming. Skills training for farmers is an important step to improve their ability to manage land efficiently and increase Dayang Rindu rice production.

CONCLUSION

The conclusion of this study is as follows: The land cultivation process for planting Dayang Rindu rice includes clearing the land from weeds and plant residues, followed by planting using superior seeds resistant to pests and diseases obtained from the Musi Rawas Regency Seed Center. Plant maintenance is carried out periodically through fertilization and pest and disease control. After six months of planting, the rice is ready to harvest, with the evaluation of the harvest results carried out by agricultural extension workers together with the Musi Rawas Regency Seed Center to improve techniques in the next harvest period. The total income from Dayang Rindu Rice farming in Tugumulyo and Purwodadi Districts reached Rp 77.6 million with a selling price of Rp 16,000 per kilogram and an average production per harvest of 4,851 kg, which if calculated monthly, provides an average income of Rp 7,906,417 per farmer. The results of multiple regression analysis showed that of the five independent variables used, only three variables had a significant influence on the production of Dayang Rindu Rice.

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