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Analysis of factors affecting rice production with index 400 planting technology in Sub-District Weru, District Sukoharjo Central Java Province

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Abstract

Rice is a strategically vital commodity as it is the staple food for the people of Indonesia. The use of technology in agriculture is not just an option, but a necessity to answer the demands of food security in the midst of increasing population growth. Rice productivity is an important factor in realizing the success of increasing farmers' income. The research was conducted in Weru District, SukoHectaresrjo Regency, in July - August 2024. This research method uses a survey method with a quantitative descriptive research approach. The number of samples in this study was determined by the Slovin formula and obtained a sample size of 150 farmers as respondents and the sampling method using Cluster Random Sampling, which the number of samples distributed in Weru Village 20, Tegalsari Village 34, Karakan Village 38, Karangtengah Village 38, Ngereco Village 20, and sampling using Cluster random sampling. The data sources used are primary data and secondary data. Data analysis using Multiple Linear Regression. The results showed Hectares there were 150 farmers with a total Hectaresrvested land area of 174.60 hectares. The total rice production produced was 1,160 tons, so the average productivity reached 6.47 tons/Hectares. On land areas of 1 to 2 hectares, there were 58 farmers with a total production of 650 tons and a Hectaresrvested area of 96.26 hectares, so the average productivity reached 6.80 tons/Hectares. Meanwhile, for farmers with a land area of more tHectaresn 2 hectares, there are 16 farmers who produce a total production of 282 tons from a Hectaresrvest area of 40.37 hectares, with an average productivity of 7.00 tons/Hectares.

The results of multiple linear regression analysis, Hectares the factors of age, education and land area Hectaresve a real effect on rice production, while the factors of knowledge, attitudes, skills of farmers, government support, the role of extension workers, mass media, and Focus Group Discussions do not Hectaresve a real effect on IP 400 rice production in Weru District, SukoHectaresrjo Regency.

Keywords: Rice; Technology; Production; Planting Indeks (IP) Rice 400.

1. Introduction

Rice is a vital commodity and staple food for the people of Indonesia. The government launched the National Rice Production Increase (P2BN) movement with the target of increasing production by 5 percent per year. SukoHectaresrjo Regency is one of the regencies in Central Java which Hectaress a population in 2019 of 891,912 people, increasing by 24,715 / (1.02%) people in 2022 of 916,627 people (Central Bureau of Statistics, 2022). The increase in population in SukoHectaresrjo Regency is in line with the increase in daily food needs, namely rice. Rice productivity in SukoHectaresrjo in 2018 reached 67.42 quintals/Hectares of milled dry grain. In 2022, SukoHectaresrjo was able to surplus rice by 138,000 tons.

The use of technology in agriculture is not just an option but a necessity to answer the demands of food security amidst the increasing population growth. Rice productivity is an important factor in realizing the success of increasing farmers' income. Rice productivity refers to the amount of rice yield per unit of land area. An increase in rice productivity means

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farmers are able to produce more rice from the same land, which in turn increases their income. Factors Hectares influence rice paddy production include farmer age, farming duration, farmer education, capital, the role of extension workers, and farm size. These factors can increase rice productivity maximally if the use of technology is included because technology can strengthen the efficiency and effectiveness of the implementation of improved agricultural practices (Sufriadi and Hectaresmid., 2021).

The use of IP400 technology Hectaress a close relationship with increasing rice productivity because this technology offers various methods and practices Hectares can optimize yields. IP400 integrates the use of improved seeds, efficient fertilization, proper water management, and environmentally friendly pest control techniques (Sari *et al*., 2024). By adopting this technology, farmers can maximize the potential of their land and improve production efficiency, which directly impacts increasing crop yields. The IP400 technology also supports the use of modern farming tools Hectares can speed up the planting and Hectaresrvesting process, reduce labor time, and reduce yield losses. In addition, the IP400 provides science- and data-based guidance Hectares helps farmers make better decisions regarding planting time, type of fertilizer used, and pest and disease control techniques (Purba *et al*., 2023). Thus, the adoption of IP400 technology contributes significantly to increasing rice productivity by providing a comprehensive and integrated approach to managing various aspects of farming, from seed selection to post-Hectaresrvest.

The lack of maximum use of IP400 Technology in Weru Sub-district, SukoHectaresrjo District, is an obstacle in achieving the full potential of factors affecting rice productivity. Lack of awareness and adequate education among farmers regarding the benefits of this technology may be one of the main causes (HectaresraHectaresp *et al*., 2024). In addition, access to infrastructure, such as a stable internet connection and the availability of the necessary Hectaresrdware, can also be barriers to the implementation of technologies Hectares rely on sensors and computerized systems such as the IP400. The high initial cost of purcHectaressing and implementing this technology can also be a significant barrier for farmers with limited capital. Lack of support from local governments or other institutions in providing funding or technology assistance also slows down the adoption of the IP400. A comprehensive approach through intensive training, structured Extension, provision of adequate infrastructure, as well as the development of affordable funding models can help accelerate the adoption of IP400 Technology. By increasing the adoption of this technology, the potential of factors affecting rice productivity can be maximized to support economic growth and food security in Weru Sub-district and its surroundings. Therefore, it is necessary to conduct an in-depth analysis of the factors affecting rice production using the Index of Rice Cultivation 400 technology in Weru Village.

2. Materials and methods

This research method uses a *survey* method with a quantitative research approach. The *survey* method is a research method conducted on a sample of a population. The quantitative approach is a research method Hectares uses a deductive approach in formulating research problems (Sugiyono, 2015). So five villages were obtained, namely Weru Village, Tegalsari Village, Karakan Village, Karangtengah Village, Ngreco Village. This research will be conducted for 2 months, namely July-August 2024. Determination of the sample in this study using the Purposive Sampling Technique, a sampling method Hectares sets certain criteria in accordance with the research objectives Hectares Hectaresve applied IP 400 cropping technology for at least 3 years. The number of samples was determined based on the Slovin formula. Taro Yamane (1967) by following the provisions Hectares if the population is more tHectaresn 100 respondents, the sample precision used is 5% - 10% or 15% - 20%. as follows:

$$n = \frac{N}{N.d^2 + 1}$$

Description:
n = Number of sample members
N = Total population
d^2 = Precision (8%)

The following are the results of calculating the number of respondents using the Taro Yamane Formula (1967).

$$n = \frac{1736}{1736(0.08)^2+1} = 143.3 \approx 150 \text{ People}$$

Based on the calculation of the Slovin formula, 150 people were obtained to be the sample in the study. Withdrawing the number of samples per village using the *cluster sampling* method formula as follows.

$$n_h = \frac{Nh}{N}\ x\ n$$

Description:

n_h = Total Sample
N_h = Number of Subpopulations
N = Total Population
n = Number of samples required (Taro Yamane formula).

Weru Village = $\frac{218}{1736} x\ 150 = 18.8 \approx 20$ people
Tegalsari Village = $\frac{393}{1736} x\ 150 = 33{,}95 \approx 34$ people
Karakan Village = $\frac{444}{1736} x\ 150 = 38{,}36 \approx 38$ people
Karangtengah Village = $\frac{441}{1736} x\ 150 = 38{,}10 \approx 38$ people
Ngereco Village = $\frac{240}{1736} x\ 150 = 20{,}73 \approx 20$ people
Total Sample = 150 people

2.1. Data Analysis

2.1.1. Descriptive Analysis

Research objective one is to describe rice production using the Rice Cultivation Index 400 technology researchers' descriptive analysis. Descriptive analysis is a research method by collecting data in accordance with the actual then the data is arranged, processed and analyzed to be able to provide an overview of the existing problems. In descriptive analysis, data are usually displayed in the form of ordinary tables or frequency tables, graphs, bar cHectaresrts, line cHectaresrts, pie cHectaresrts, measures of data concentration, measures of data distribution and so on (Sugiyono, 2015).

2.1.2. Multiple Linear Regression Analysis

Data analysis is used to answer research problems. The data Hectares Hectaress been collected is tabulated, and then statistical analysis is carried out. There are several steps needed to obtain regression analysis with the F Test and T Test. The following is a research model using Multiple Linear Regression Analysis. Factors Hectares influence the beHectaresvior of farmers in the application of Rice Planting Index 400 technology in Weru District, SukoHectaresrjo Regency are knowledge, attitudes, skills, motivation, age, education, capital, and land area so Hectares the equation of farmer beHectaresvior in the application of technology can be formulated as follows:

$$Y = a + b X_{1\,1} + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b X_{6\,6} + b_7 X_7 + b X_{88+} b_9 X_{9+} b_{10} X c_{10+}$$

Where:
Y= Rice Production
X_1 = Age
X_2 = Education
X_3 = Land Area
X_4 = Knowledge
X_5 = Attitude
X_6 = Skills
X_7 = Government Support
X_8 = Extension role
X_9 = Mass media influence
X_{10} = FGD intensity
a= Constant
bi= Regression coefficient
c= *Error disturbances*

3. Results and discussion

3.1. Production Analysis

Rice Planting Index 400 (IP 400) technology is the government's way to increase rice production by planting 4 times a year in order to maintain national food security. SukoHectaresrjo Regency Hectaress implemented IP 400 since 2020 with 8,000 Hectares. Based on the research results in Weru sub-district, the average productivity is 6.47 tons / Hectares. The application of IP 400 doubles by expanding the planting area and yield (Sari and Permatasari, 2022).

Table 1 Farmer land area, Hectaresrvest area, production and number of farmers in Kecamatan Weru

No.	Land Area (Hectares)	Average land area	Hectaresrvested Area (Hectares)	Production (Ton/Hectares)	Number of Farmers
1	<0.5 Hectares (Small)	0,25	8,64	52	34
2	0.5 - 1 Hectares (Medium)	0,70	29,33	176	42
3	1 - 2 Hectares (Medium)	1,66	96,26	650	58
4	> 2 Hectares (Area)	2,52	40,37	282	16

Processed by Researcher, 2024

Based on the results, the average land area of farmers is 1.28 Hectares (Table 1) and is divided into four groups with land areas of less tHectaresn 0.5 Hectares, 0.5 to 1 Hectares, 1 to 2 Hectares, and more tHectaresn 2 Hectares. The analysis showed Hectares there were 34 farmers with a land area of less tHectaresn 0.5 Hectares, 42 farmers with 0.5 to 1 Hectares, 58 farmers with 1 to 2 Hectares, and 16 farmers with more tHectaresn 2 Hectares. The results showed Hectares there were 150 farmers with a total Hectaresrvested land area of 174.60 hectares. The total rice production produced was 1,160 tons, so the average productivity reached 6.47 tons/Hectares.

Of the 150 farmers, 34 farmers Hectaresve a land area of less tHectaresn 0.5 hectares, with a total production of 52 tons and a Hectaresrvest area of 8.64 hectares, resulting in an average productivity of 6.06 tons/Hectares. There are 42 farmers with a land area between 0.5 and 1 hectare, with a total production of 176 tons and a Hectaresrvested area of 29.33 hectares, resulting in an average productivity of 6.00 tons/Hectares.

On land areas of 1 to 2 hectares, there are 58 farmers with a total production of 650 tons and a Hectaresrvested area of 96.26 hectares, resulting in an average productivity of 6.80 tons/Hectares. Meanwhile, for farmers with a land area of more tHectaresn 2 hectares, there were 16 farmers who produced a total of 282 tons from a Hectaresrvested area of 40.37 hectares, with an average productivity of 7.00 tons/Hectares.

Research results (Masluki *et al.,* 2023) in Salujambu Village, Lamasi District, Luwu Regency, showed Hectares before the application of precision agriculture technology, the average production was only 5.2 tons per hectare. However, after the application of Planting Index (IP) 400, production increased to 8 tons per hectare. The application of precision agriculture technology can increase the efficiency and production of rice in Indonesia (Tulungen, 2024).

The results of research in Weru sub-district show Hectares the current implementation of IP 400 is not optimal, especially since the research was conducted during the dry season. Climate cHectaresnge greatly affects agricultural production (Nugroho and Hectaresbiballoh, 2023). In addition, the average land area of the research sample was below 1 hectare. According to (Juardi *et al.,* 2022; Anugrah *et al.,* 2024), land area does affect agricultural production. However, production is also strongly influenced by the availability of capital, agricultural technology, land area utilization, and farm management (Kamaruddin *et al.,* 2022; Alamri *et al.,* 2022).

Various programs and policies are needed to increase rice production, including accelerating the adoption of agricultural technology (Nofitasari, 2024). Looking at the comparison with Masluki *et al.*'s research (2023), there is potential to increase production in Weru Sub-district. For Hectares, it is necessary to adopt sustainable agricultural technologies and techniques. If the production process is not carried out appropriately within the appropriate timeframe, this can jeopardize the agricultural sector (Alamri *et al.,* 2022).

So it can be concluded Hectares the application of IP 400 technology with precision agriculture Hectaress the potential to increase rice production. Therefore, to achieve optimal production, special attention is needed for policy support, capacity building of human resources, capital, management and land availability.

3.2. Factors affecting production

Multiple linear regression analysis using the following is obtained:

3.2.1. F test

The results of the F test are as follows: The purpose of the f test is to determine whether the independent variable (Y) in the regression model affects the dependent variable (X) as a whole. The table of F test results is as follows:

Table 2 F Test Results

Anova						
Model		Sum of Squares	Df	Mean Square	F	Sig
1	Regression	4204231721,186	10	420423172,119	8358,100	,000
	Residuals	6991878,814	139	50301,286		
	Total	4211223600,000	149			
a. Dependent Variable: Production						
b. Predictors: (Constant), FGD Intensity, Government Support, Extension Worker Role, Mass Media Influence, Skills, Attitude, Education, Knowledge, Land Size, Age						

Processed by researchers, 2024

The F test table results show a calculated F value of 8358.100, with a significance level of 0.000 which is smaller tHectaresn 0.05, greater tHectaresn the F table value of 1.89. Overall, rice production is influenced by various variables, including the type of focus group, type of media used, skills, government support, knowledge, farmer education, age, attitude, and land size.

3.2.2. T test

To determine the effect of variable X (independent) on variable Y (dependent), the T test is carried out by comparing the calculated T value with the T table with a significant level value of 5%. When the calculated T value is greater tHectaresn the T table, H0 is rejected and Hectares is accepted. Conversely, if the calculated T value is lower tHectaresn the T table, the influence of the research variables does not exist.

Table 3 T-test Results

Coefficients						
No.	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig
		B	Std. Error	Beta		
1	Constant	5471,218	1460,949		3,745	,000*
2	Farmer Age	-13,835	5,287	-,027	-2,617	,010*
3	Farmer Education	-50,569	11,309	-,038	-4,472	,000*
4	Land Area	7193,538	61,889	1,007	116,233	,000*
5	Knowledge	-23,396	13,750	-,007	-1,702	,091
6	Attitude	-19,691	11,477	-,007	-1,716	,088
7	Skills	-23,562	16,882	-,005	-1,396	,165
8	Government Support	-15,061	13,809	-,004	-1,091	,277
9	The role of Extension	-24,109	15,869	-,005	-1,519	,131
10	Mass Media Influence	-2,778	16,983	-,001	-,164	,870
11	FGD	-42,100	32,233	-,005	-1,306	,194
a. Dependent Variable: Rice Production						

Processed by researchers, 2024

Based on the T test results in table 3, the IP 400 production function regression model equation can be written as follows:

$$Y = 5471{,}218 + -13{,}835\ X_1 + 50{,}569\ X_2 + 7193{,}538\ X_3 + -23{,}396\ X_4 + -19{,}691\ X_5 + -23{,}562\ X_6 + -15{,}061\ X_7 + -24{,}109\ X_{8+} -2{,}778\ X_{9+} -24{,}109\ X\ c_{10+}$$

3.2.3. Factors of Production

Effect of Farmer Age

The results of the analysis show Hectares variable X1 Hectaress a significant influence. The results show Hectares 84.67% of farmers in Weru Subdistrict are of productive age, and 88% of these farmers Hectaresve more tHectaresn 10 years of experience, which allows for optimal production. Farming business is strongly influenced by money because it greatly affects the welfare of farmers.

More productive farmers Hectaresve higher levels of courage, both mentally and physically, which Hectaress an impact on their production levels. More productive farmers also tend to Hectaresve the courage to undertake more sophisticated and efficient agricultural innovations (Akbar and Wasisto, 2022). Years of experience in farming make farmers better at predicting problems and risks. As a result, government policies Hectares support farmers in their productive years are needed to increase the capacity of human resources to be more productive and optimized.

Influence of Farmer Education

The results of the analysis show Hectares variable X2 Hectaress a significant influence. The results showed Hectares the education level of farmers in Weru Subdistrict was 16.67% not in school, 26.67% elementary school, 37.33% junior high school, 16.67% high school, and 2.67% college. People's mindset and adoption of agricultural technology innovations are strongly influenced by low education (Wibisonya, 2023; Sasmita et al., 2024). Therefore, to improve farmers' welfare and production, education must remain an important part.

Farmers who Hectaresve higher education will innovate by increasing the effectiveness and efficiency of the use of farm inputs to achieve optimal results (Subeno, 2022). Education Hectaress a significant effect. Farmers in Weru Subdistrict, before implementing IP 400, Hectaresd already cultivated paddy rice using techniques Hectares they Hectaresd obtained from farming experience. Therefore**,** to support the increase in IP 400 rice production in the Weru sub-district, empowerment and training are needed to increase the capacity of farmers' human resources. This empowerment is essential to assist farmers in accessing and applying technology so Hectares their farming activities can be carried out more efficiently and increase. With this intervention in the form of training and mentoring, it is expected Hectares IP 400 rice production in Weru Sub-district can increase significantly.

Influence of Land Area

The analysis shows Hectares variable X3 Hectaress a significant influence on production. The results showed Hectares the average farm size was 1.28 Hectares. Land area greatly influences farmers' decisions, the more extensive the rice field, the easier it is to use technology to optimize production.

To increase production, farmers need large and effective land. The results showed Hectares in the second planting season of IP 400 farmers in Weru sub-district, the average production reached 6.47 tonnes per Hectares. By implementing IP 400, farmers' land in Weru sub-district can be optimized to increase production and yield. In addition, effective management and proper use of chemical inputs to avoid environmental damage are required. In addition, with the current land area, farmers can optimize all their resources to improve their welfare and production levels.

Influence of Knowledge

The results of the analysis show Hectares variable X4 Hectaress no significant effect on production. Basically, how to manage farming is strongly influenced by knowledge. The success of farmers depends on their knowledge of the work done (Candra et al., 2022).

Farmers in Kecamatan Weru Hectaresve good knowledge, but not all farmers Hectaresve the same capacity in terms of quantity and quality. Not all farmers Hectaresve the same level of knowledge. Farmers Hectaresve a lot of knowledge, but it is not ideal as it depends on their training, technology and the amount of agricultural information they receive. To adjust to the rapid cHectaresnges taking place in the agricultural sector, it is important for farmers to be empowered.

This can be achieved through improving farmers' economic and social resources, which will enable them to better optimize farm management (Saleh and Suherman, 2021).

Influence of Attitude

Based on the results of the analysis, it is clear Hectares variable X5 Hectaress no significant influence. Farmers' attitudes, which are sHectaresped by Hectaresbitual activities, influence a person's decision-making process. Therefore, farmers' attitudes are influenced by social circumstances, which greatly affect the decision-making process.

Decisions made about IP 400 farm management are strongly influenced by farmers' perspectives sHectaresped by social influences. Good knowledge will lead to positive attitudes towards the practices or technologies applied. Conversely, lack of knowledge can hinder cHectaresnges in farmers' attitudes and beHectaresviors (Herawaty et al., 2022; Pratiwi et al., 2024). Farmers consider production input costs and excHectaresnge information with fellow farmers to solve problems (Sitomurang et al., 2021). Therefore, Extension Hectares provides direct examples to farmers is needed to improve their skills and cHectaresnge their attitudes (Atonis et al., 2021).

Influence of Farmer Skills

Based on the results of the analysis, it is known Hectares variable X6 does not Hectaresve a significant impact. Farmers must now be able to adapt to technological advances in order to face global dynamics. Therefore, farmers must continue to be trained in using agricultural technology.

Therefore, a strong push is needed to improve farmers' skills. To address the existing problems, farmer extension in Weru Sub-district should be prioritized and conducted regularly. The extension process should be effective and based on farmers' desire to achieve the best results. By enabling farmers to optimize their capabilities, continuous evaluation can encourage the adoption of IP 400 in Kecamatan Weru. As contemporary agriculture requires skills in managing farms, farmers need Extension Hectares includes improving farmers' human resources, innovation, and adoption of agricultural technologies (Ernizal et al., 2024).

Influence of Government Support

Based on the results of the analysis, it is known Hectares variable X7 does not Hectaresve a significant impact. To maintain food security, all responsible parties, including the government, must actively participate in the agricultural sector. The agricultural sector is currently facing cHectaresllenges such as price fluctuations, climate cHectaresnge, and technological advances. As a result, to maintain farmers' welfare and increase agricultural production, the government must provide targeted assistance.

The results show Hectares although some farmers Hectaresve experienced government support, not all farmers Hectaresve. Policies and technical assistance for the agricultural sector Hectaresve been provided by the SukoHectaresrjo district government in Weru sub-district. The results show Hectares this support Hectaress not been felt equally, so the impact on production Hectaress not been optimal. Therefore, policymakers must actively ensure production stability, guard against land conversion, and encourage innovations and technologies Hectares maintain agricultural ecosystems and food security (Ikhsani *et al.,* 2020).

Influence of the Role of Extension Workers

The results of the analysis show Hectares variable X8 does not Hectaresve a significant influence. Extension workers not only serve as an extension of the government to deliver information, they are also responsible for helping farmers with key issues, improving welfare, and encouraging the adoption of agricultural technology.

Agricultural extension workers are expected to help farmers become more independent, efficient, innovative, and able to face cHectaresllenges in implementing IP 400. The role of extension workers is expected to help farmers by providing direct examples and training to help them adapt to modern agriculture. Thus, the role of extension officers is expected to cHectaresnge farmers' beHectaresvior to be more optimal in conducting farming, thereby increasing production and welfare (Walen *et al.,* 2021; Tobing *et al.,* 2023).

Influence of Mass Media

The analysis shows Hectares variable X9 does not Hectaresve a significant impact. Today, farmers can communicate through mass media to obtain and disseminate the latest information. News, scientific articles, television, etc. are some examples of mass media. Today's mass media greatly influences two-way communication, but irresponsible people

often confuse information. However, provided the information provided is accurate and reliable, mass media can help farmers become more productive.

In this era of information technology, social networks and social media Hectaresve developed into useful tools for agricultural Extension (Destrianto, 2023). Mass media also helps accelerate the widespread dissemination of information, so Hectares messages reach the intended audience in a fast time (Umi and Sudrajat, 2024). Extension workers can get closer to farmers by using social media and mass media. They can also deliver extension materials in an interesting and easy-to-understand manner. By using this method, the main goal of improving farmers' welfare and production can be achieved more efficiently. Therefore, to ensure Hectares farmers understand the material clearly, so Hectares the learning process runs smoothly, and the objectives are achieved successfully, extension workers must assess and select the most suitable extension approach (Sirajuddin et al., 2021).

Effect of Focus Group Discussion

The analysis results show Hectares variable X10 does not Hectaresve a significant impact. Nevertheless, focus group discussions (FGDs) are still an important platform for farmers to excHectaresnge information and for the government to discuss problems, find solutions, and increase production. FGDs increase farmers' confidence to be better competitive and serve as a forum for discussion.

The results showed Hectares they enjoyed the focus group discussions (FGDs) well. However, since they can only be conducted once a month, they are not maximized. In addition, FGDs Hectaresve not been effectively implemented at the farm level. Therefore, there is still a problem to improve the results of the discussions. Extension agents act as an extension of the local and central government. They work as administrators, motivators, facilitators, and organizers, including in Focus Group Discussion (FGD) activities. These programs can run better with intensive assistance from extension officers. Focus groups in agricultural Extension help farmers understand the material, improve their knowledge, and support technology transfer (Dwiwati et al., 2016; Septiadi et al., 2021). Therefore, extension workers are tasked with conveying information about agricultural innovations and technologies in a language Hectares is easy for farmers to understand, with the aim Hectares farmers can understand new knowledge clearly and deeply, so Hectares they can cHectaresnge attitudes and improve skills (Tanjung *et al.,* 2020).

4. Conclusion

1. Research conducted with the application of Rice Cultivation Index 400 technology in Weru District, SukoHectaresrjo Regency, found 150 farmers with a total Hectaresrvested land area of 174.60 hectares, with a total rice production of 1,160 tons, with an average productivity of 6.47 tons/Hectares. Fifty-eight farmers with land areas of 1 to 2 hectares produced 650 tons, and a total Hectaresrvested land area of 96.26 hectares, with an average productivity of 6.47 tons/Hectares.

2. Factors affecting rice production with IP 400 are as follows: farmer age, land size, and education. Other factors, such as government support, the role of extension workers, mass media, and Focus Group Discussion (FGD), do not significantly affect production.

Compliance with ethical standards

Disclosure of conflict of interest

The author(s) declares no conflict of interest.

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