



Kenaf production is highly competitive through location, maximize capacity and post-plant corn land layout

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ABSTRACT

This research was a trial of Kenaf plant production in Suradadi Village, Tegal Regency. Kenaf trees will be processed into fiber which is used as raw material for industries such as paper, textiles, bags, carpets, automotive basic materials and other goods. The problem of this research is the production of highly competitive Kenaf plants in Suradadi village, Tegal Regency by using location, maximizing the capacity of the media used for corn plantations and layout. This type of research method is Research and Development, Longitudinal R&D research and quantitative research. For quantitative research, data is obtained from survey results. The sampling method is non-probability sampling, and the sampling technique is purposive sampling. The data was then subjected to SWOT analysis and multiple linear regression analysis and hypothesis testing. The results of this research calculating the weights in the SWOT analysis obtained values for internal factors (8.01; 2.15) and external factors (49.43; 6.95). The results of the t test on the Location variable obtained a value of $1.992 > 1.703$ and a significant value of $0.049 < 0.05 = H1$ was accepted; Capacity $2.675 > 1.703 = H2$ is accepted and the significant value is $0.016 < 0.05$; Layout $3.055 > 1.703$ and significant value $0.0049 < 0.05 = H3$ is accepted. The F test obtained $7.086 > 0.743$ and a significant value of $0.001 < 0.05 = H4$ was accepted. Conclusion: The results of the t test and F test for the Location, Capacity and Layout variables have a partial and simultaneous effect on Competitiveness

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INTRODUCTION

Kenaf trees have very bright prospects and are being developed as industrial raw materials. Kenaf trees will be processed into fiber which is used as raw material for industries such as paper, textiles, bags, carpets, automotive basic materials and other goods at very high prices. To produce kenaf trees requires a fairly long process, between 3 months and 5 months.

In the industrial sector, the products produced have been designed by humans supported by machines and equipment used that are more sophisticated and modern, with media or space that meets standards for carrying out various kinds of operations and workers who have sufficient skills and education in carrying out the production process.

Meanwhile, in the agricultural sector, various factors will influence the results obtained, such as natural factors, equipment, media and labor. The products produced are formed by nature which is supported by natural conditions during the process, simple machines and equipment, open media or space for the production process and low and unskilled education of the workforce.

The object of this research is Suradadi village, Tegal Regency, Central Java, which has a geographical location on the north coast, has hot temperatures and an agricultural sector that still relies on rainwater https://id.wikipedia.org/wiki/Suradadi,_Tegal . The agricultural sector in Suradadi village has experienced setbacks for several years due to the dry season being longer than the rainy season.

The aim of this research is to conduct trials on the production of kenaf trees using land used for corn plantations during the dry season. The kenaf tree is a plant that has value and is competitive, can grow in various soil conditions and does not require a lot of water.

The implication of this research is to produce kenaf plants that are highly competitive by utilizing land after planting corn when entering the dry season. The problem of this research is the production of highly competitive Kenaf plants in Suradadi village, Tegal Regency by using location, maximizing capacity of the media used for corn plantations and layout.

The problem studied in Suradadi village, is whether paddy fields after rice/corn harvest can produce kenaf trees that have high competitiveness? Operations have a major influence on competitiveness through product and service design, cost, location, quality, response time, flexibility, inventory and supply chain management and services (William J Stevenson & Chee Choung, 2014). To produce highly competitive kenaf trees is supported by several factors, namely location, land capacity and planting layout.

The location of Suradadi village, Tegal district, which is on the north coast, will it be able to produce highly competitive Kenaf trees?. Location selection considerations include total production costs, the aim is to encourage industrial or service businesses to choose locations that will minimize operating costs. Can the capacity of the former corn planted land produce highly competitive kenaf trees? Strategic capacity because capacity will influence ease of management more easily than when capacity is unbalanced (William J Stevenson & Chee Choung, 2014). The land capacity used for planting kenaf trees in this trial was land that had been planted with corn, with media partitioned by irrigation.

What is the layout of the former corn plantation in Suradadi village, Tegal district, to be used for planting kenaf trees? The irrigation layout for the former corn plantations has been formed and the plant distance layout must adapt to the existing media. The layout method for spacing Kenaf seed plants aims to allow the seeds to grow optimally. Layout planning is needed in the process of redesigning existing facilities (William J Stevenson & Chee Choung, 2014).

This research refers to research entitled "Growth Response of Kenaf (*Hibiscus Cannabis* L) with Differences in Planting Distance and Shoot Pruning" with the research results "The interaction of plant distance treatment and pruning treatment has a significant effect on plant diameter parameters. Plant distance treatment can regulate competition for nutrients in plants so that it can influence changes in plant morphology and influence plant photosynthesis" (Chairani Hanum Taufik Yafirzam & T Irmansyah, 2019).

RESEARCH METHOD

This type of research method is Research and Development, R&D research is longitudinal (several stages). To analyze needs so that mortgage products can be produced, basic research methods are

often used. (Sugiyono, 2019a). The stages in carrying out this research consist of selecting a location, land preparation, planting and maintenance. Maintenance consists of watering, thinning, fertilizing, weeding, pest and disease control, and harvesting.

The method used is through natural trials and surveys. (a) Natural Trial (Naturalistic) this research involves conducting experiments on land remaining from corn crops in the dry season, (b) the survey was carried out to members of farmer groups, accompanying experts, Ulu-ulu (village irrigation section) and academics in Suradadi village by distributing questionnaires. The sampling method used is non-probability sampling, with a sampling technique namely purposive sampling. The data obtained was then analyzed using SWOT analysis, multiple linear regression analysis and hypothesis testing. SWOT analysis is the systematic identification of various factors to formulate company strategy (Freddy Rangkuti, 2014).

RESULTS AND DISCUSSIONS

Kenaf Production / Planting Trial Process

Determining the location for planting kenaf trees ; The location chosen for the kenaf tree planting trial was in Suradadi village, Tegal Regency. (b) Maximizing Capacity for Planting Kenaf Trees ; This trial used a land capacity of 7,000 m² of former corn plantations is carried out over 4 months, namely May to August 2023. By using used corn land, it will save costs for making water channels during the planting process. Kenaf seeds in the kenaf tree planting trial used \pm 24 kilograms of kenaf seeds. which comes from the Research Institute for Tobacco Plants and Fiber Research and Development (Balittas) (b) Lay Out the Planting Distance ; The kenaf tree planting layout trial is make a hole in the ground 2 cm deep, the distance between 20 cm x 20 cm and fill each hole with 2 - 3 kenaf seeds. (c) Plant maintenance until harvest ; In this research trial, keeping kenaf plants growing well in the dry season was not easy. High and hot air temperatures and easily evaporated water cause kenaf plants to die quickly if they lack water. (d) Harvest ; Harvesting of kenaf plants is carried out after the plants are 90 days old (3 months) with a tree height of 3 - 5 meters. The harvesting method in this trial still uses manual, namely logging using manual tools. The results of kenaf trees from this trial, which were obtained in the dry season, were 51 tons of kenaf stems from an area of 7,000 m². The yield obtained decreased by 10% from the harvest during planting in the rainy season of 56 tons. This decline is caused by natural factors that do not support the planting of kenaf trees.

Calculation of Profit from Kenaf Planting

The cost calculation will determine the profit and loss obtained from planting Kenaf trees. So these costs must be identified into 2 groups, namely fixed costs and variable costs.

a. Fixed Costs

For 4 month kenaf tree plantings accompanied by experts who have experience planting kenaf trees with a mentoring fee. Provision of land rental costs Rp. 9,000,000/year because for planting 3 crops, namely rice, corn and kenaf trees, the calculation is IDR. 9,000,000 : 3 = Rp. 3,000,000 (for planting kenaf trees). The land used is former crop land. Equipment rental costs: pesticide sprayer, mask and decoticator and kenaf seeds in the following table:

Table 1. Fixed costs of kenaf production

Komponen	Jumlah	Biaya (Rp)
Land rental costs	7.000 m ²	Rp. 3.000.000
Equipment rental costs		Rp. 6.000.000
Seeds	24 kg	Rp. 3.600.000
Total Fixed Cost		Rp. 12.600.000

b. Variable Costs

Labor costs are calculated per kenaf tree planting cycle. Details of costs during the process of planting Kenaf trees can be presented below:

Table 2. Variable cost kenaf production

Component	Amount	Cost
NPK Fertilizer	3,5 Quintal	Rp. 1.750.000
Urea Fertilizer	3,5 Quintal	Rp. 1.750.000
Pesticide	10 liter	Rp. 700.000
Weed Killer	10 liter	Rp. 1.000.000
Labor		Rp. 9.000.000
Irrigation		Rp. 2.000.000
Fuel Costs	60 liter	Rp. 960.000
Harvest Costs		Rp. 3.900.000
Carriage Cost		Rp. 1.000.000
Miscellaneous Expense		Rp. 5.000.000
Total Cost		Rp. 27.060.000

c. Preparation of Profit and Loss Production of Kenaf plants

Calculation of the total costs = fixed Cost + variable cost = Rp. 12.000.000 + Rp. 27.060.000 = Rp. 39.060.000. The harvest obtained 51 tons of Kenaf trees are made into 3 tons of dry kenaf fiber, with a selling price of Rp. 18,000 per kilo gram. The profit/loss calculation for planting kenaf trees based on the costs used and the proceeds from selling kenaf stems. So a Profit/Loss report on kenaf production can be prepared as follows:

Table 3 Profit and Loss Production Kenaf Palnts 2023

Profit and loss		
Production of Kenaf plants 2023		
Sales of 3 tons of kenaf @Rp. 18.000/kg = 3 X 1000 kg X Rp. 18.000		Rp. 54.000.000
Production Costs (Planting Kenaf Trees)	Fixed Cost	Rp. 12.600.000
	Variable Cost	<u>Rp. 27.060.000+</u>
Total Cost		<u>Rp. 39.060.000</u>
Profit		<u>Rp. 14.940.000</u>

SWOT Analysis (Strength, Weakness, Opportunity and Threats)

This kenaf plant production trial was analyzed using SWOT analysis, namely by identifying Strength, Weakness, Opportunity and Threats, the aim is to analyze internal factors (strengths and weaknesses) and external factors (opportunities and threats) in kenaf plant production in Suradadi sub-district, Tegal district. The data was then processed using Excel 2016 which is presented in the table below:

Table 4. SWOT analysis results

Internal Factors				
No	Strengths	Weight	Rating	W X R
1	Availability of land that meets the criteria for kenaf plant production	9,00	0,23	2,10
2	Availability of farmer groups	7,43	0,19	1,43
3	Availability of superior kenaf seeds	5,14	0,13	0,69
4	Availability of all production requirements for kenaf plants	7,57	0,20	1,48
5	Kenaf plants can be planted on any type of land	9,43	0,25	2,31
	Amount	38,57	1,00	8,01
No	Weaknesses	Weight	Rating	W X R
1	Farmers in kenaf production locations do not have sufficient knowledge about kenaf plants	1,71	0,14	0,24
2	Availability of experts at the kenaf production location	1,43	0,14	0,20

3	The kenaf plant production location has minimal irrigation and relies on rainwater	2,57	0,25	0,63
4	Availability of required equipment and technology	2,14	0,20	0,43
5	The kenaf plant production location has low agricultural productivity	2,57	0,25	0,64
	Amount	87,57	2,98	2,15
	Total	126,14	3,98	10,16
External Factors				
No	Opportunity	Weight	Rating	W X R
1	The processed results of the kenaf plant become natural fibers needed by industry	10	0,20	2,02
2	Demand for kenaf fiber is very high	9,86	0,20	1,97
3	Processed kenaf plant products have high competitiveness	10	0,20	2,02
4	The selling price of kenaf fiber is very competitive	10	0,20	2,02
5	The results of kenaf planting can increase farmers' income	9,57	0,19	1,85
	Amount	49,43	1,00	49,43
No	Threats	Weight	Rating	W X R
1	Risk of failure in kenaf planting due to incorrect irrigation layout	1,71	0,46	3,68
2	The use of land used for corn crops has an impact on the planting layout which is not optimal	1,86	0,49	0,91
3	The wrong technique for making holes in the soil for planting kenaf carries the risk of failed kenaf harvests	1,86	0,42	0,79
4	Plant spacing techniques that are too narrow when planting kenaf affect the growth and quality of kenaf stems	1,86	0,42	0,79
5	Planting distances that are too wide will result in less than optimal harvest results	1,86	0,42	0,79
	Amount	108,00	4,22	6,95
	Total	157,43	5,22	56,38

Source: Primary Data processed in Excel 2016

Based on table 4 above, the values for internal factors (8.01; 10.16) and external factors (49.43; 56.38) are obtained. After calculating the weight of each internal and external factor that influences the production of kenaf trees, it is then analyzed using the SWOT matrix. What can be seen in table 5 of the following SWOT matrix:

Table 5. SWOT analysis matrix

Internal		Strengths (S)	Weakness (W)
	1.	Availability Of Land That Meets The Criteria For Kenaf Plant Production	1. Farmers In Kenaf Production Locations Do Not Have Sufficient Knowledge About Kenaf Plants
	2.	Availability Of Farmer Groups	2. Availability Of Experts At The Kenaf Production Location
	3.	Availability Of Superior Kenaf Seeds	3. The Kenaf Plant Production Location Has Minimal Irrigation And Relies On Rainwater
	4.	Availability Of All Production Requirements For Kenaf Plants	4. Availability Of Required Equipment And Technology
	5.	Kenaf Plants Can Be Planted On Any Type Of Land	5. The Kenaf Plant Production Location Has Low Agricultural Productivity
External		Opportunities (O)	Strategy Wo
	1.	The Processed Results Of The Kenaf Plant Become Natural Fibers Needed By Industry	1. Looking For Information About The Production Of Competitive Kenaf Plants (W3, W4, O1, O2)
	2.	Demand For Kenaf Fiber Is Very High	2. Regular Management And

3.	Processe d Kenaf Plant Products Have High Competitiveness	Kenaf (S3, S4, S5, O2, O4)	Maintenance Of Kenaf Plants (W2, O1, O2, O4)
4.	The Selling Price Of Kenaf Fiber Is Very Competitive		3. Availability Of Appropriate Technology (W1, W2, W4, O3)
5.	The Results Of Kenaf Planting Can Increase Farmers' Income		
Threats (T)		Strategy St	Strategy Wt
1.	Risk Of Failure In Kenaf Planting Due To Incorrect Irrigation Layout	Producing Large-Scale Kenaf Plants (S3, S4, S5, S3, S4)	1. Provide Training To Farmer Groups (W1, W2, W5, T3, T4, T5)
2.	The Use Of Land Used For Corn Crops Has An Impact On The Planting Layout Which Is Not Optimal		
3.	The Wrong Technique For Making Holes In The Soil For Planting Kenaf Carries The Risk Of Failed Kenaf Harvests		
4.	Plant Spacing Techniques That Are Too Narrow When Planting Kenaf Affect The Growth And Quality Of Kenaf Stems		
5.	Planting Distances That Are Too Wide Will Result In Less Than Optimal Harvest Results		

Multiple Linear Regression Analysis

Multiple Linear Regression Analysis is an analytical tool to determine the influence of two or more independent variables on the dependent variable. Multiple linear regression analysis is used to get an idea of the influence of Location (X1), Capacity (X2) and Layout (X3) on Competitiveness (Y). The results of Multiple Linear Regression Analysis from this research can be seen in the following table:

Table 6 multiple linear regression analysis

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	9,274	2,810		3,300	,003
	Location	,412	,207	,527	1,992	,049
	Capacity	,332	,198	,541	2,675	,016
	Layout	,473	,155	,551	3,055	,005

a. Dependent Variable: Daya Saing

Source: Primary Data Processed by SPSS 25

Based on table 6, the regression equation X1, X2, and X3 to Y. Sugiyono (2017: 253) states that the multiple linear regression equation is $Y = a + b1X1 + b2X2 + b3X3$

The constant value (a) can be read in Costant row column B, namely 9.274, the Location coefficient value (b1) is 0.412, the Capacity coefficient value (b2) is 0.332, and the Layout coefficient (b3) is 0.437 for Competitiveness (Y) entered into in the equation that can be seen below: $Y = 9.274 + 0.412 \text{ Location} + 0.332 \text{ Capacity} + 0.437 \text{ Layout}$

From the multiple regression equation (X1, X2, X3 against Y) it can be explained: (a) The constant is 9.274, meaning that if the variables Location (X1), Capacity (X2) and Layout (X3) have a value of zero, then the value of Competitiveness (Y) is 9.274 units. (b) The regression coefficient for the Location variable (X1) on Competitiveness is positive at 0.412; This means that if Location increases by 1 assuming other variables remain constant, then Competitiveness will increase by 0.412. The coefficient is positive so it can be concluded that the more fertile the planting location, the more Competitiveness of Kenaf plant production will be increased. (b) The regression coefficient for the Capacity variable (X2) has a positive value on Competitiveness with a positive value of 0.332; This means that if Capacity increases by 1 assuming other variables remain constant, then Competitiveness will increase by 0.332. The coefficient is positive, so it can be concluded that the better the capacity of the planting land, the more competitive the Kenaf plant production will be. (c) The regression coefficient for the Layout variable (X3) has a positive value on Competitiveness with a positive value of 0.437; This means that if Layout increases by 1 assuming other variables remain constant, then Competitiveness will increase by 0.437. The coefficient is positive, so it can be concluded that the more layout the planting is, the more competitive the Kenaf plant production will be.

Hypothesis Testing

a. t-Test (Partial)

The t test is used to determine whether the independent variable has a significant effect on the dependent variable, namely Location (X1), Capacity (X2) and Layout (X3) on Competitiveness (Y). The decision making criteria are the sig value. < 0.05 then H_0 is rejected, and H_a is accepted or can be done with the results of the t_{count} test, namely $t_{count} < t_{table}$ then H_0 is accepted or H_a is rejected, and vice versa if $t_{count} > t_{table}$ then H_0 is rejected or H_a is accepted. The t test results can be seen in table 7 below:

Table 7. t-Test Results (Partial Test)

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	9,274	2,810		3,300	,003
	Location	,412	,207	,527	1,992	,049
	Capacity	,332	,198	,541	2,675	,016
	Layout	,473	,155	,551	3,055	,005

a. Dependent Variable: Daya Saing

Source: Primary Data Processed by SPSS 25

Based on the results of the t test (Partial test) in table 7, the following conclusions can be drawn: (a) The variable Location on Competitiveness obtained a t_{count} value of 1.992, which means $t_{count} < t_{table}$, namely $1.992 > 1.703$ with a significant value of $0.049 < 0.05$, meaning H_1 is accepted. There is a unidirectional relationship between Location and Competitiveness, which means that there is a positive influence of Location on the Competitiveness of Kenaf plant production in Suradadi village, Tegal Regency. (b) The variable Capacity on Competitiveness obtained a t_{count} value of 2.675, which means $t_{count} > t_{table}$, namely $2.675 > 1.703$ with a significant value of 0.016, meaning H_2 is accepted. There is a unidirectional relationship between Capacity and Competitiveness, which means that there is a positive influence on Capacity and Competitiveness on Kenaf crop production in Suradadi village, Tegal Regency. (c) The Layout variable on Competitiveness obtained a t_{count} value of 3.055, which means $t_{count} > t_{table}$, namely $3.055 > 1.703$ with a significant value of $0.005 < 0.05$, meaning H_3 is accepted. There is a unidirectional relationship between Layout and Competitiveness, which means that there is a positive influence on Layout and Competitiveness on Kenaf plant production in Suradadi village, Tegal Regency.

b. F Test (Simultaneous)

The F test in this research is used to test the independent variables, namely Location (X1), Capacity (X2) and Layout (X3) which together influence Competitiveness (Y). The test can be carried out by comparing F_{count} and F_{table} with the criteria $F_{count} > F_{table}$ meaning the hypothesis is proven, then H_0 is rejected and H_4 is accepted if carried out simultaneously. The F test results from this research can be seen in the table below

Table 8. F Test Results (Simultaneous Test)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70,833	3	23,611	7,086	,001 ^b
	Residual	86,634	26	3,332		
	Total	157,467	29			

a. Dependent Variable: Daya Saing

b. Predictors: (Constant), Layout, Location, Capacity

Source: Primary Data Processed by SPSS 25

Based on table 8, it is obtained that F_{count} is 7.086, which means $F_{count} > F_{table}$ namely 7.086 > 0.743 with a significant value of $0.001 < 0.05$ which can mean that H_4 is accepted. So the hypothesis that there is an influence of Location, Capacity and Layout on Competitiveness is proven or accepted. It can be concluded that there is a positive influence of Location, Capacity and Layout on the Competitiveness of Kenaf plant production in Suradadi village, Tegal Regency.

c. Coefficient of Determination

The coefficient of determination R is used to measure how far the model's ability to explain the dependent variables (Ghozali. 2018: 97). The correlation coefficient value in the R square column in the Model Summary output is entered into the coefficient of determination degree formula is $KD = R^2 \times 100\%$. The results of the coefficient of determination test can be seen in table 9 as follows:

Table 9. Coefficient of determination test results

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,671 ^a	,450	,386	1,825	,450	7,086	3	26	,001

a. Predictors: (Constant), Layout, Location, Capacity

b. Dependent Variable: Daya Saing

Source : Primary Data Processed by SPSS 25

Based on table 9, the resulting coefficient of determination in the R square column is 0.386. The coefficient degree equation formed is $KD = R^2 \times 100\% = 0.386$ It can be concluded that the percentage contribution of the Location, Capacity and Layout variables together to Competitiveness is 38.6% and the remaining 62.4% is influenced by other factors not examined in this research.

Discussion

a. Kenaf Plant Production Process

The yield of kenaf plants in the dry season from 7000 m² of former corn plantations is 51 tons. Harvest yields decreased by 10% from the rainy season yield of 56 tons. 51 tons of kenaf stems will produce 3 tons of kenaf fiber using a decorticator machine (Nurhikmah Weisdiyanti et al., 2019)

b. Kenaf Crop Production Profits

51 tons of Kenaf tree is made into 3 tons of dry kenaf fiber, with a selling price of Rp. 18,000/kilo gram. The results of planting kenaf, although the results are not optimal, still make a profit of Rp. 14.940.000.

c. SWOT Analysis

The data obtained and analyzed using SWOT analysis, obtained internal factor values (8.01; 10.16) and external factors (49.43; 56.38).

d. Effect of Location on the Competitiveness of Kenaf Plants

The results of the t test for the Location variable on Competitiveness obtained a $t_{\text{count}} > t_{\text{table}}$, namely $1.992 > 1.703$ with a significant value of $0.049 < 0.05$, meaning H1 is accepted. There is a positive influence of location on the competitiveness of Kenaf plant production in Suradadi village, Tegal Regency. The practical implication of this research is that production location is very important to produce competitive products. In this research, the Kenaf plant production location was in Suradadi village, Tegal Regency, which is located at the tip of the north coast, has hot air, irrigation relies on rainwater, low agricultural productivity and less fertile agricultural land. The impact of location has an effect on decreasing results which are less than optimal even though the results of this trial are still profitable. So that the Suradadi village location can be reused to develop Kenaf crop production by paying attention to factors, namely training for farmer groups, climate and irrigation.

e. Effect of Capacity on the Competitiveness of Kenaf Plants

The results of the t test for the Capacity variable on Competitiveness obtained a $t_{\text{count}} > t_{\text{table}}$, namely $2.675 > 1.703$ with a significant value of 0.016, meaning H2 is accepted. There is a positive influence on the capacity and competitiveness of Kenaf crop production in Suradadi village, Tegal Regency. The production capacity of Kenaf plants is influenced by climate, although using former corn land will be optimal if planted during the rainy season and with sufficient irrigation. So it can be said that the use of former corn land can be developed further by paying attention to irrigation, climate and other factors.

f. The Effect of Layout on the Competitiveness of Kenaf Plants

The results of the t test for Layout variable on Competitiveness obtained a t_{count} value of 3.055, which means $t_{\text{count}} > t_{\text{table}}$, namely $3.055 > 1.703$ with a significant value of $0.005 < 0.05$, meaning H3 is accepted. There is a positive influence on the layout and competitiveness of Kenaf plant production in Suradadi village, Tegal Regency. The practical implication of this research is that the layout of irrigation channels for used corn fields minimizes the costs of constructing water channels and makes it easier to use water for watering Kenaf planting media. The spacing when planting kenaf is 20 cm x 20 cm which is very important for the growth of 3-5 meters of kenaf plants.

g. Influence influence of Location, Capacity and Layout on Competitiveness

The results obtained are $F_{\text{count}} > F_{\text{table}}$, namely $7.086 > 0.743$ with a significant value of $0.001 < 0.05$ which can be interpreted as H4 being accepted. So the hypothesis that there is an influence of Location, Capacity and Layout on Competitiveness is proven or accepted, it can be concluded that there is a positive influence of Location, Capacity and Layout on the Competitiveness of Kenaf plant production in Suradadi village, Tegal Regency. The coefficient of determination test results show that the coefficient of determination value in the R square column is 0.386. The coefficient degree equation formed is $KD = R^2 \times 100\% = 0.386$. Based on these results, it can be concluded that the percentage contribution of the Location, Capacity and Layout variables together to

Competitiveness is 38.6% and the remaining 62.4% is influenced by other factors not examined in this research, namely season and experiences of farmer groups.

CONCLUSION

The conclusion from the kenaf planting trial was that the results of kenaf plants entering the dry season on former corn land were not optimal because the irrigation ditch was too wide. Production capacity is not optimal because the costs of the planting process in the dry season will increase due to high labor costs, costs for purchasing irrigation water, fertilizer, pesticides and so on. To reduce water evaporation, it is important to pay attention to the layout of plant spacing.

The implication of this research is that farmers today not only produce food crops, but can produce crops needed by industry such as kenaf. The contribution of this research is that there is innovation in the agricultural sector, especially in Suradadi village, Tegal district, that dry land can be used for kenaf production, but attention must still be paid to water irrigation. Because kenaf plants do not need as much water as food plants, the most important thing is that the soil remains moist during planting.

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