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The Impact of Using Certified Durian Seedlings on Durian Farming Income in Amoito Village, Ranomeeto Sub-district

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Abstract

The durian tree in Amoito Village is a local and superior type of durian tree. If the more characteristics that consumers like are collected in one fruit, the higher the economic value (price) of the fruit. Thus it can be classified as a superior fruit. For this reason, examples of how to assess durian fruit can be taken based on the criteria for the appearance of the fruit and the characteristics of the fruit that consumers like. This research was carried out in Amoito Village, Ranomeeto District. From January to March 2024, the research location was determined purposively, where the area was one of the villages in Ranomeeto District whose people cultivated durian farming. The population in this study were all farmers who cultivated durian, namely 30 people. Determining the sample in this study used a saturated sampling technique, where the entire population was sampled. There were 19 samples from farmers who used certified seeds and 11 from farmers who used non-certified seeds. Farming businesses using certified seeds earned the highest income compared to farming businesses using non-certified seeds. This is because certified durian seed farming produces higher yields compared to non-certified ones. The results of farming certified durian seeds are Rp. 314,415,000 while non-certified durian seed farming is Rp. 177,713,709.53. The total income of farmers who use certified and non-certified seeds is IDR. 196,701,291 which means positive impact (+). Where the income received by farmers who use certified seeds is greater than non-certified.

Keywords: Durian seeds, certified durian, income.

INTRODUCTION

Indonesia is a country that has extraordinary natural wealth consisting of land and sea,

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with various nicknames pinned by the world, ranging from agricultural countries to archipelagic countries. The agricultural sector is one of the crucial sectors in national food security to meet the needs of all Indonesian people, increase competitiveness, create jobs, and absorb labor. The agricultural sub-sector that has a major role in Indonesia's agricultural level is the horticultural agricultural sector (BPS southeast Sulawesi, 2021). Meanwhile, according to Nur'aini (2019) horticulture comes from the words hortus / *garden* and culture / *cultivation*, this term is used to indicate a production system that serves the daily needs of fresh commodities from vegetables, fruits, and ornamental plants.

Data from the Central Statistics Agency (BPS) in 2021 for the category of seasonal fruit crops with the largest production of 11,900 quintals, experienced a slight increase of 0.55% compared to the previous year. South Konawe Regency with a contribution of 31.07% to Southeast Sulawesi production. Fruits are one of the most abundant and largest growing horticultural commodities in almost all regions of the archipelago.

Seedlings are young plants resulting from propagation either generatively from seeds or vegetatively from other plant materials. The quality of seedlings must reflect the ability of seedlings to grow and adapt to their environment after planting (Sudarajat, 2019). Meanwhile, according to (Suwita, 2019) seedling quality is a criterion tailored to the purpose (*fitness for pupose*), including parameters that determine the ability of seedlings to grow and adapt to the environment after planting.

To determine good seeds should be through certification, while according to Reformasi Biroktorat (2023) competency certification in the agricultural sector is the process of providing certificates to human resources in the agricultural sector which is carried out systematically and objectively through competency tests with reference to the Indonesian national work competency standards (SKKNI) in the agricultural sector. SKKNI is a formulation of abilities covering aspects of knowledge, skills, and work attitudes that are relevant in carrying out duties and responsibilities determined in accordance with applicable laws and regulations. As for the selection of seed certification, the source seed class used must be higher than the seed class to be produced, genetic purity must meet the requirements set for each seed class, seed processing includes drying and cleaning from dirt, marking is carried out in accordance with the requirements of SNI, packaging must be made of airtight and unbreakable materials in accordance with SNI requirements, storage is carried out in a controlled (temperature and humidity), and storage is carried out in a place that does not easily affect seed quality derivatives.

Durian trees in Amoito Village are local and superior durian trees. Herlina (2012) states that the superior nature of fruit plants is mainly the value of the quality of the fruit, if the more

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properties that consumers like are collected in one fruit, the higher the economic value (price) of the fruit. Thus it can be classified as superior fruit. for example, it can be taken how to assess durian fruit based on the criteria of fruit appearance and fruit properties that consumers like. The achievement targets expected through the application of the SOP of durian seed production are: 1. The use of durian rootstocks that comply with healthy standards from clear parent trees. 2. The use of durian scion varieties that have been released / registered by the Minister of Agriculture and come from registered mother trees. 3. Seeds that are ready to be distributed with the following criteria: a minimum height of 40 cm from the grafting point or 60 cm from the root collar. 4. The seeds distributed have been labeled. 5. In making certified seeds by referring to the technical procedures related to Horticultural seeding contained in the Regulation of the Minister of Agriculture of the Republic of Indonesia Number 23 of 2021. The summary can be seen in the flowchart of the quality management system certification process set by the Indonesian Minister of Agriculture.

Amoito Village is one of the villages in Ranomeeto District, South Konawe Regency, where there are several farmers who cultivate durian. Based on observations from the field and information from related parties regarding durian farming. This encouraged researchers to find out about the impact of certified durian seeds on durian farming income in Amoito Village, Ranomeeto District.

METHOD

This research was conducted in Amoito Village, Ranomeeto District from January to March 2024. The population in this study were all farmers who cultivated durian, namely 30 people, who were then drawn into a research sample using saturated sampling technique, so that 18 samples were obtained from farmers who used certified seeds and 11 farmers from farmers who used non-certified seeds. The type of data in this study comes from primary data and secondary data.

Data collection techniques were carried out by observation at the research location, interviews with a number of research samples by providing a questionnaire or list of questions, then literature study. The data was then analyzed using the following techniques;

1. Income Analysis, to test the problem in the first objective, the calculation of income is used by calculating total costs, revenue, and income using the following formula:

   $TC_D = TFC_D + TVC_D$

   $TC_D = (TFC_{DS} - TVC_{DS}) + (TFC_{DnS} -)TVC_{DnS}$

   Description:

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TC = Total cost of durian farming (Rp/year)
TFC = Durian farming fixed costs (Rp/year)
TVC = Variable cost of durian farming (Rp/year)
TFCDS = Fixed costs of certified durian farming (IDR/year)
TVCDS = Variable costs of certified durian farming (IDR/year)
TFCDnS = Fixed costs of non-certified durian farming (IDR/year)
TVCDnS = Variable cost of non-certified durian farming (IDR/year)

To calculate the acceptance of durian farming seedlings certification and non-certified durian seedlings can use the following formula, (Soekartawi 1995):

$TR_{DS} = Y_{DS} \cdot Py_{DS}$ or $TR_{DnS} = Y_{DnS} \cdot Py_{DnS}$

Description:
TR = *Total revenue of* durian farming
YDS = Durian production certification
PDS = Certified durian price Y
YdnS = Production of non-certified durian
PDnS = Price of non-certified durian Y

To calculate the income of certified and non-certified durian farming seedlings, the following formula can be used:

$\pi_{DS} = (TR_{DS} - TC_{DS})$ or $\pi_{DnS} = (TR_{DnS} -)TC_{DnS}$

Description:
Π = Durian farming income (Rp/year)
TRDS = *Total Revenue* (Total Revenue) durian certification durian farming (Rp/year)
TCDS = Total cost of durian farming certification (Rp/year)
TRDnS = Total *Revenue* of durian non-certified durian farming (Rp/year)
TCDnS = Total *Cost* of durian non-certified durian farming (Rp/year)

2. Impact, used to calculate the total income of farmers using certified seedlings and non-certified seedlings, the following formula is used:
π $= TR_D - TC_D$
π $= (TR_{DS} - TC_{DS}) - (TR_{DnS} -)TC_{DnS}$
if : (+) positive impact

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Description:

Π = Durian farming income (IDR/year)
TR = Total *Revenue* (Total Revenue) durian farming (Rp / year)
TC = Total Cost of durian farming (Rp/year)
TRDS = Total *Revenue* (Total Revenue) durian certification durian farming (Rp / year)
TCDS = Total *Cost* of durian farm certification (Rp/year)
TRDnS = Total *Revenue* (Total Revenue) durian non-certified durian farming (Rp / year)
TCDnS = Total Cost of durian non-certified durian farming (Rp/year)

3. The t test, to determine whether each independent variable individually has a significant effect on the dependent variable. In other words, to find out whether each independent variable can explain the changes that occur in the dependent variable in real terms. The t test is used to make a decision whether the hypothesis is proven or not, where the significant level used is 5%. According to Sugiyono (2010) if the number of samples is different ($n_1 \neq n_2$) and the variance is homogeneous, so the *pooled variance* formula can be used, degree of freedom (dk) = $n_1 + n_2 - 2$. Mathematically the *pooled variance* formula is as follows:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(n_1 - 1){S_1}^2 + (n_2 - 1){S_2}^2}{n_1 + n_2 - 2}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

Where:

X_1 = Average profit of farmers using certified duian seeds
X_2 = Average profit of farmers using non-certified duian seeds
n_1 = Number of farmer respondents who use duian seeds
n_2 = Number of farmer respondents who use non-certified duian seeds
S_1 = Variance of profit of farmers who use certified duian seeds
S_2 = Variance of profit of farmers using non-certified duian seeds

Inference criteria:

- If $t_{calculated} < t_{table}$, then H_0 is accepted and H_1 is rejected.
- If $t_{calculated} > t_{table}$, then H_0 is rejected and H_1 is accepted.

Where:

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H_0 : Farmers' profits from using certified and non-certified seeds are equal or not significantly different.

H_1 : Farmers' profits from using certified and non-certified seeds are not equal or significantly different.

RESULTS AND DISCUSSION

Analysis of the Use of Certified Durian Seedlings on Durian Farming Income

Revenu

Revenue is the total income earned from a business during one period calculated from sales, or total production, multiplied by the price (Suratiyah, 2015). The average production costs incurred by farmers of certified durian seedlings and non-certified seedlings per year in Amoito Village, Ranomeeto District.

Table 1 Production Costs of Durian Farmers in Amoito Village

No.	Description	Certified		Not Certified	
		Cost (Rp/year)	Percentage (%)	Cost (Rp/year)	Percentage (%)
1	Fixed Cost	127.183,59	0,35	133.744,59	1,55
2	Variable Cost	36.386,05	99,65	8.463.526,41	98,45
Total Cost		36.513.236,59	100	8.597.271,00	100

Source: Primary Data, 2024

Variable costs are expenses with a shorter time span that fluctuate in line with production volume or business activities, such as the cost of seeds, fertilizers, pesticides, and labor, which can affect the calculation of gross profit as well as taxes. Meanwhile, fixed costs are expenses that do not occur every day and do not change even if the production volume increases, such as hoes, machetes, and sprayers, which have a fixed nominal amount in each production process and rarely experience overruns, which can increase efficiency and affect the calculation of taxable profit.

Reception

Revenue is one of the components that determine the level of income. Durian farm receipts are influenced by the amount of production produced and the selling price of each production. At the time of this study, farmers who used certified seeds and uncertified seeds to

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distribute and distribute to consumers. The results of the average annual revenue using certified durian seeds and non-certified durian seeds in Amoito Village, Ranomeeto District.

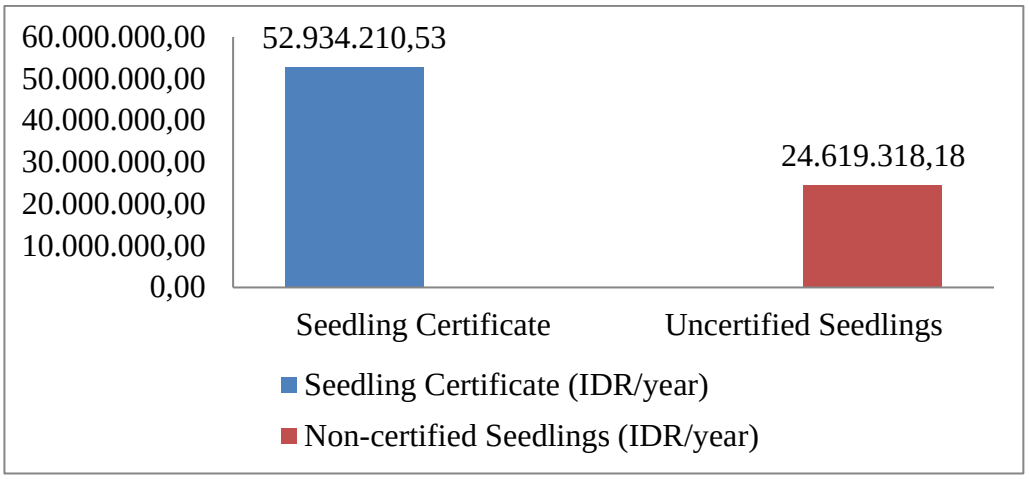


Figure 1 Revenue earned by farmers of certified seedlings and non-certified seedlings per year in Amoito Village, Ranomeeto Sub-district

Figure 1 shows that durian farming with certified seeds obtained high revenue compared to non-certified durian seeds. This is due to the production of durian farming using certified seeds is higher than that of non-certified seeds. The average production of durian using certified seeds is Rp. 36,386,053 / year and durian farming using non-certified seeds is Rp. 8,463,526 / year with a selling price of Rp. 35,000 / Kg.

Revenue

Farm income is farm income minus total farm income. The amount of farm income also depends on the area of cultivated land, the cultivation process and the use of labor. Therefore, the better the farm management, there is a tendency for the higher income to be received by farmers. The results of the average income obtained by farmers per year on durian farming with certified seeds and non-certified seeds in Amoito Village, Ranomeeto District.

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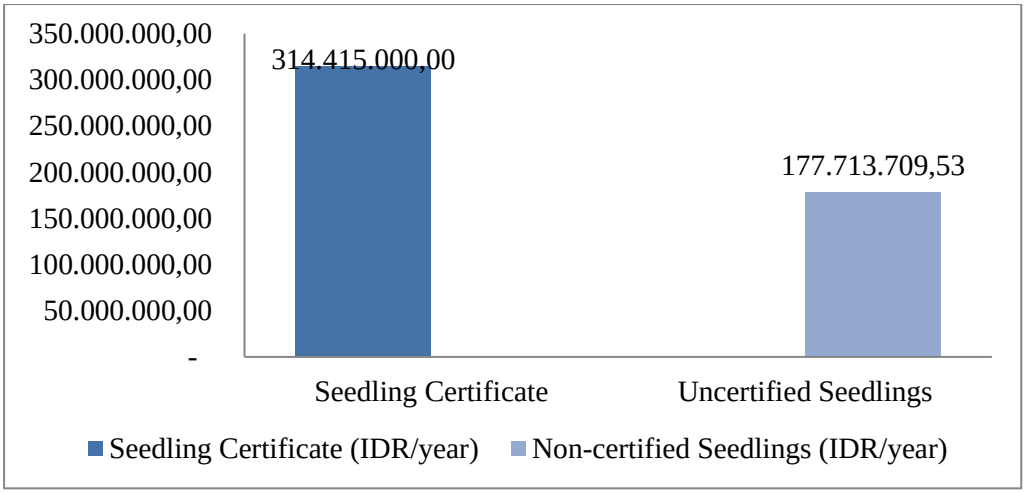


Figure 2 Income earned by farmers of certified seedlings and non-certified seedlings per year in Amoito Village, Ranomeeto Sub-district

Based on Figure 2 shows that farms using certified seeds have the highest income compared to farms using non-certified seeds. This is because durian farming certified seedlings obtain higher yields compared to the nonsertified. The results of durian farming certified seeds amounted to Rp. 314,415,000 while durian farming uncertified seeds Rp. 177,713,709.53.

There are differences between farmers who run durian farming in the research area using certified seeds and those using non-certified seeds, the complete average income of durian farming certified and non-certified seeds is presented in Table 2.

Table 2 Types of Durian Farming Income

Seedlings	N	Mean
Certificate	19	16548157,89
Non-certified	11	16155791,78

Source: Primary Data, 2024

From Table 2 above it can be concluded that the average income of farmers using certified seeds is higher than non-certified where the average income of farmers using certified seeds is Rp. 16,548,158 while non-certified is Rp. 16,155,792. With a slight difference in income of Rp. 392,366.

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Impact

The result of the total income of farmers using certified and non-certified seeds is Rp. 196,701,291 which means a positive impact (+). Where the income received by farmers who use certified seeds is greater than non-certified.

Unpaired t-test results Income

Table 3 Differential Test Results

Farmer Income	t	Sig	Df	Sig. (2- tailed)
	0,529	0,469	71	0,952

Source: Primary Data, 2024

The t-test results show a t-test value of 0.925 > 0.05 (Sig. (2-tailed) > 0.05), meaning that there is no significant difference between the income of farmers who use certified and non-certified seeds. This finding supports the results of previous research conducted by Darisman *et al* (2020). In the study, it was found that the t-test resulted in no significant difference between the income of farmers who used certified and non-certified seeds.

CONCLUSION

Based on the results of research and discussion, it can be concluded that the income of durian farming certified seeds in Amoito Village, Ranomeeeto District Rp. 314,415,000 per year. Meanwhile, the farm income of durian non-certified seeds is Rp. 177,713,709.53 per year. The average income of farmers using certified seeds is higher than that of non-certified farmers where the average income of farmers using certified seeds is Rp. 16,548,158 while non-certified is Rp. 16,155,792. With a slight difference in income of Rp. 392,366. The result of the total income of farmers using certified and non-certified seeds is Rp. 196,701,291, which means a positive impact (+). The t-test results show a t-test value of 0.925 > 0.05 (Sig. (2-tailed) > 0.05), meaning that there is no significant difference between the income of farmers who use certified and non-certified seeds.

The results of this study show that the income generated by farmers who use certified seeds has much better production and income than farmers who use non-certified seeds. Therefore, farmers who use non-certified seeds should switch to using certified seeds which have much better production and income. Future researchers can use variables that are not included in this study such as seed costs, fertilizer costs, pesticide costs and labor costs.

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