



COMPARATIVE ANALYSIS OF THE PROFITS OF FATTENING SUPER BREED CAWS WITH MADRAS BREEDS IN SIMALUNGUN DISTRICT, NORTH SUMATRA

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Abstract

Simalungun Regency is the 4th highest beef producing district in North Sumatra thus making Simalungun Regency very potential in fattening cattle. This study aims to determine the difference between the advantages of fattening cattle using super sheeds and madras sheeds in Simalungun Regency, North Sumatra. The data analysis method used is descriptive quantitative with statistical analysis tools independent sample t-test. The results showed that the profits of the super breeders of cattle fattening business were not the same as the Madras breeds with the average profit per kg obtained by super breeders of cattle fattening of Rp. 466/kg, while the average profit per kg obtained by Madras cattle fattening breeders is Rp. 1,391/kg. This result can be strengthened by the value of t arithmetic (17.011) > t table (2.048) and p value (0.000) < α (0.025), so it can be concluded that the profit of fattening cattle on super breeds is not the same as that of madras seedlings.

Keywords: *Comparative, profit, fattening cattle, super seed, madras seed*

1. INTRODUCTION

Beef cattle fattening is a form of end-of-life business before beef cattle are marketed. This business can be run from young cows to adult cows. There is a tendency that if cattle are fattened and sold, they have good economic value. This occurs because after fattening, the weight of the cattle will increase so that the selling price also increases (Yulianto and Saparinto, 2017). The aim of fattening cattle is to increase beef production per head, increase the amount of meat offered efficiently without slaughtering more cattle, overcome the declining cattle population due to slaughter and to avoid slaughtering female cattle of productive age.

Indonesia generally has 2 types of feedlot cattle breeds, namely local cattle breeds (madras breeds) and Australian Commercial Cross or ACC breeds (super breeds). Madras cattle breeds have been cultivated for generations in Indonesia by breeders and are well adapted to the local environment. These types of local cattle consist of Balinese, Peranakan Ongole (PO), Maduraese and Acehnese cattle with an average weight of Madras cattle breeds reaching 90 kg/head. and then can be harvested within 12 months. Meanwhile, the type of ACC cattle breeds (super breeds) is a type of crossbreed cattle that is often found in Indonesia and consists of Brahman Cross cattle, Limousin cattle, Simmental cattle with an average weight of super cattle breeds reaching 105 kg/head and can then be harvested within a short period of time. 6 months (Fikar and Ruhyadi, 2012).

Simalungun Regency is one of the districts/cities in North Sumatra. Simalungun Regency occupies the 4th position as the Regency that produces the highest beef in North Sumatra Province, reaching up to 1,406,964 tons of beef (BPS, 2019), making Simalungun Regency very potential in cultivating cattle fattening. The purchase or collection of cattle seeds used for fattening in Simalungun Regency is entrusted to one source, namely CV. Yunzi Jaya which is located in Dolok Sinumbah (Dosin). This CV also facilitates the delivery of seeds to fattening and maintenance locations. Apart from that, this CV also has a relationship like a partnership. Consumers who purchase cattle seeds at CV. Yunzi Jaya can resell the results from fattening and harvesting livestock to the CV, making it easier to market the harvest. Below is a table of the number of supplies of super and madras cattle from CV. Yunzi Jaya in Simalungun Regency.

Table 1. Number of supplies of super and madras (tail) cattle in Simalungun Regency by CV. Yunzi Jaya 2019 – 2021.

Subdistrict	2019		2020		2021	
	Super (tail)	Madras (tail)	Super (tail)	Madras (tail)	Super (tail)	Madras (tail)
Land of Java	520	618	560	618	560	620
Dolok Batu Nanggar	844	652	857	672	864	672
Mount Malela	780	720	800	750	816	768
Mount Maligas	691	696	698	684	720	684
Hutabayu Raja	716	658	519	786	704	656
Bah Jambi	735	752	750	752	760	752
Huluan City	503	430	555	422	600	420
Bookie	640	445	667	445	688	480
Bosar Maligas	800	720	780	700	765	680
Padang Edge	560	575	560	570	580	560
Amount	6,789	6,266	6,746	6,399	7,057	6,292

Source: Processed Primary Data. 2022.

Table 1 shows the difference in the number of super and madras cattle seeds marketed by CV. Yunzi Jaya in Simalungun Regency stated that the total demand for super cattle breeds was greater than the total demand for madras cattle breeds. Apart from the total number of seeds produced, the picture of the cattle fattening business in Simalungun Regency can also be seen in terms of price, where per kilogram of super cattle seeds used for fattening reaches Rp. 100,000 with a selling price of Rp. 105,000/Kg in head units and the price for Madras cattle per kilogram reaches Rp. 90,000 with a selling price of IDR 95,000/Kg in head units. Based on the two types of cattle seeds, namely super cattle seeds and madras cattle seeds, there are differences ranging from the total number of different seed requests, seed prices, selling prices, length of fattening period, to the cost of feed incurred which will cause differences in profits between cattle fattening businesses that use super seeds and madras seeds.

LITERATURE REVIEW

Cattle Fattening Business

In fattening, the cattle that are fattened are cattle that are thin but have the potential to become fat. Activities in cattle fattening that are routinely carried out are feeding, cleaning the cows and pens and the health of the cows. So that weight can increase quickly, farmers can provide medicine and keep the environment and cows clean (Yulianto and Saparinto, 2017).

Seed Classification

Cows are livestock that come from the Bovidae family, such as bison, buffalo (Bubalus), African buffalo (Syncherus), bulls and anoa. There are many breeds of cattle in the world, starting from the British cattle race, mainland European cattle breeds, Brahman cattle breeds. and their crossbreeds and zebu breeds, but for cattle fattening in Indonesia there are 2 types of cattle that are cultivated (Prasetya, 2012).

Production cost

According to Muammar, et al (2018), costs are sacrifices of economic resources incurred with the aim of gaining profits within a certain time. Costs can also be called expenses or expenses which are part of the costs incurred by a company to obtain profits within a certain period of time.

Reception

Revenue or income from the cattle fattening business is the result of the sale of cattle that have been fattened. The amount of revenue from cattle fatteners for the purpose of selling fattened cattle will depend greatly on the weight gain achieved during the fattening process and the selling price of the cattle. This is expressed in units of price per kilogram of body weight (Rianto and Purbowati, 2013).

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Profit

Business profit is the reduction of total income or receipts from total costs. If the amount of revenue and costs is known then the profits obtained from cattle fattening farming can then be calculated (Rianto and Purbowati, 2013).

Comparative Analysis (Comparison)

According to (Misbahuddin, 2013) comparative analysis is analysis that is to compare the similarities or differences of two or more facts and characteristics regarding the object being studied based on a framework of thought. This comparative analysis or difference test is often also called a significant test.

2. RESEARCH METHODS

Location, Object and Scope of Research

This research was conducted in Simalungun Regency, North Sumatra. This location was chosen purposively with the consideration that Simalungun Regency is one of the districts with great potential for cultivating cattle fattening. The object of this research is cattle breeders who fatten cattle using super and madras seeds in Simalungun Regency. The scope of this research is limited to analyzing the comparative profit of cattle fattening businesses using super and madras seeds in Simalungun Regency, North Sumatra Province.

Population and sample

The population in this study were all breeders who fatten cattle using either super cattle breeds or Madras cattle breeds in Simalungun Regency, North Sumatra. The sampling technique in this research was determined for two sub-districts, namely Gunung Malela Sub-district and Bosar Maligas Sub-district, which were determined purposively (intentionally) with the fraction that Gunung Malela sub-district was the sub-district whose demand for super and madras cattle seeds increased from 2019 to 2021 and the sub-district Bosar Maligas is a sub-district where demand for super and madras cattle breeds decreased from 2019 to 2021.

Table 2. Number of samples used and taken using an unbalanced stratified random technique

No	Information	Respondents/Population	Picking fraction sample	Sample
1.	Super Seeds	44	1/3	15
2.	Madras Seeds	45	1/3	15
	Total	89		30

3. RESULTS AND DISCUSSION

1. Analysis of Cattle Fattening Business

Super cattle breeds are a type of cattle breed that is a cross between local cattle breeds and foreign cattle breeds. Super cattle breeds used for fattening include Brahman, Simmental and Lomiousin cattle. Apart from that, this type of cow has twice the appetite compared to Madras cattle, but sometimes super cattle breeds are difficult to develop or breed, so sometimes it is difficult to have offspring and their numbers are limited compared to Madras cattle. Madras cattle breeds are local cattle breeds whose immune system is stronger than super cattle breeds. The Madras cattle breeds used for fattening include Ongole, Madura, Bali and Aceh crossbreed cattle.

Apart from that, Madras cattle breeds can also adapt quickly to their environment and their immune system is stronger against various diseases, Madras cattle breeds can also be easily developed to have calves, so there are quite a lot of people interested in Madras cattle breeds. Caring for cattle breeds, both super and madras during fattening, includes giving concentrate feed which is only done in the morning around 8 to 9 am, then continuing to clean the pen and bathing or cleaning the cows which is done in the morning around 10 to 12 noon, then given grass food in the afternoon around 5 to 6 pm.



Apart from feed, other treatments are also given to super breed cattle and Madras breeds such as giving vaccines every 3 months with a dose of 1 bottle of cattle vaccine injection fluid, then deworming medication which is given every 3 months with a dose of 1 pack of cow worm pills until up to the harvesting stage, namely super cattle seeds can be harvested within a period of 6 months of maintenance and madras cattle seeds can be harvested within a period of 12 months of maintenance. Giving vaccines to livestock is used to provide immunity or antibodies to cattle to avoid viruses that attack the livestock's immune system and cause livestock's appetite to decrease, therefore vaccines for fattening cattle are routinely carried out so that cattle can remain healthy and the cattle's appetite remains stable. to increase, usually farmers who fatten cattle use the Aftopor vaccine at a predetermined dose, namely 1 bottle of vaccine. The same thing with vaccines, giving worm medicine to cattle is also very necessary, this also applies to avoid the occurrence of worms in cattle which causes appetite to decrease so that it affects production, usually farmers who fatten cattle use the worm medicine albendazole at a high dose. has been determined, namely 1 pack of worm pills. Based on the results of research conducted in the field, super cattle seeds used in fattening for one day can consume 5 kg of concentrate and 5 kg of grass per head. This is what can make the production of super cattle breeds higher than Madras cattle breeds. The following is a tabulation of average land area, production, price, total costs, revenues and profits from the business of fattening super breed cattle with madras breeds in Simalungun Regency, North Sumatra.

Cattle Fattening Business Production

Production is the result received by breeders after carrying out cattle fattening business activities. The average production obtained by breeders who use super seeds is 8,325 kg (Appendix 7), while the average production obtained by breeders who use madras seeds is 5,806 kg (Appendix 7). Appendix 8). The difference in production is because the appetite of super cattle breeds is higher than that of Madras cattle breeds. The harvest process for super cattle seeds is the same as Madras cattle seeds. There are two types of harvest that can be carried out by breeders, with the first technique being selling production directly with CV. Yunzi Jaya and the second is collecting orders from each individual and then on the same day marketing all the production.

Total Cost of Cattle Fattening Business

Costs are expenses incurred by farmers in carrying out business activities. Farmer production costs include fixed costs and variable costs. The variable costs incurred by breeders include the costs of seeds, vaccines, concentrates, worm medicine, grass feed, electricity costs, water costs, compressor oil and labor wages, while the fixed costs incurred include depreciation costs for buildings, buckets, shovels, broom sticks, ropes, sickles, boots and compressor machines. The average total costs incurred by super cattle breeders is IDR. 142,686/Kg (Appendix 7). Meanwhile, the average total costs incurred by Madras cattle breeders is IDR. 156,038/Kg (Appendix 8).

Acceptance of Cattle Fattening Business

Revenue is the result of sales from production received by cattle fattening businesses. The average income from Bibi Super's cattle fattening business is IDR. 142,853/Kg (Appendix 7), while the average revenue received by Madras cattle fattening businesses is IDR. 156,315/Kg (Appendix 8).

Benefits of Cattle Fattening Business

The amount of profit obtained by cattle fattening businesses in the research conducted is the difference between the total revenue (TR) received by cattle fattening businesses and the total costs incurred by cattle fattening businesses when carrying out production activities. The total profit received by a cattle fattening business is the result of business activities carried out in the form of production of additional weight of meat which is calculated in kg sold to generate revenue, while the total costs are the sum of fixed costs and variable costs incurred in running the business. If the revenue obtained by the madras cattle fattening business is greater than the costs incurred, then the profits received by the madras cattle fattening business will also be large and vice versa. As for the profits obtained by super cattle fattening businesses in the research conducted, the average profit obtained was IDR. 467/Kg (Appendix

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7). Meanwhile, the average profit obtained by Madras cattle fattening businesses is IDR 1,392/Kg (Appendix 8).

2. Comparative Analysis

The difference in profits from the business of fattening super breeds of cattle with madras breeds in Simalungun Regency can be seen in real terms through analysis of the difference test or t test (independent t test) with unpaired samples which can be shown as follows.

Table 8. Results of the t test analysis (independent t test) of the average profit of the super and madras cattle fattening business.

Profit	Average	N	Std. Deviation	Std. Error Mean
Super Seeds	842.60	15	156,287	40,353
Madras Seeds	1970,40	15	558,967	144,325

Source: Primary data processed. 2022.

The SPSS output table above shows that the average profit received from fattening super breed cattle is IDR. 842/Kg, while the average profit received by farmers fattening Madras cattle is Rp. 1,970/Kg, thus from descriptive statistics it can be concluded that there is an average difference between the profits of fattening super breed cattle and madras breeds. Meanwhile, there is a difference between the profits of the business of fattening super seed cattle and madras seed per kg, which is Rp. 1,128/Kg. The next step is to prove whether the difference in average profits is significant (real) or not, so it is necessary to interpret the output of the following independent sample test.

Table 9. Results of analysis of sig values with alpha (α) profits from the business of fattening super and madras breed cattle

		F	Sig.	t	Df	Sig. (2-tailed)
Benefits of cattle fattening	Equal Variances Assumed	14,318	0.001	-7,526	28	,000
	Equal Variances not assumed			-7,526	16,176	,000

Source: Primary data processed. 2022.

With manual calculations, based on the output above, we can see that the sig. (2-tailed) of 0.000 or smaller than 0.025 (α) It means $\mu_1 \neq \mu_2$, then as is the basis for decision making in the independent sample t test, it can be concluded that the hypothesis proposed H_a accepted with the conclusion that there is a significant difference in average profits between the fattening business of super breed cattle (Rp. 842/Kg) and madras breed cattle (Rp. 1,970/Kg) in Simalungun Regency, North Sumatra. Differences in profits obtained from costs and revenues, where differences in costs and revenues are influenced by the type of cattle seed used, so that the profits received by each business party show differences and the type of costs are influenced by the length of production period required by the type of seed used so that The profits obtained also show differences. Referring to research conducted by Latifah, et al (2016), in their research entitled Comparison of Ongole Crossbreed Cattle Breeding Businesses with Crossbred Cattle in Bunihayu Village, Jalancagak District, Sabang Regency, the data analysis used was t test analysis (independent t test). So it can be concluded that there are differences in the average production and profits obtained by the two cattle fattening businesses, due to differences in seed types, production results, costs and selling prices. Therefore, the results of the research that has been carried out are in line with previous research guided by the author, where there are real differences in average production, total costs, revenues and profits between super breed and madras cattle fattening businesses due to differences in the types of seeds used.



4. CONCLUSION

Based on the results of the research and data analysis that has been carried out, it can be concluded that there is a significant difference between the profits of the business of fattening super breed cattle with madras breeds in Simalungun Regency, North Sumatra and the average profit obtained by breeders fattening super breed cattle of IDR. 842/Kg, while the average profit per kg obtained by farmers fattening Madras cattle is Rp. 1,970/Kg with a profit difference between the two types of seeds of Rp. 1,128/Kg, meaning that the average profit of the madras cattle fattening business is higher than that of super cattle. Apart from the profits obtained, there are also differences in the costs incurred for fattening super breed cattle with madras breeds. The average total costs incurred by breeders who use super cattle breeds is IDR. 142,686/Kg, while the average total costs incurred by Madras cattle breeders is Rp. 156,038/Kg.

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