

Increasing Knowledge of Bali Cattle Farmers Through Counseling and Technical Guidance in Palangga District, South Konawe

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ABSTRACT

This study aims to analyze (1) the implementation of extension activities and technical guidance and (2) the increased knowledge of cattle farmers in extension activities and technical guidance in Palangga District. The model used in this activity is delivering material through counseling and technical guidance. The results of the research obtained are at the stage of conducting research carried out by delivering material directly with the discussion method followed by field activities, namely technical guidance, and to measure the increase in knowledge and skills of farmers with counseling and technical guidance, a pre-test evaluation is carried out and continued with post-test evaluation. Then, based on the results of the recapitulation of pre-test and post-test data analysis, it showed an increase in the knowledge and skills of related farmers: (a) management of maintenance and selection of Bali cattle breeds increased by 30%, (b) forage and animal feed management by 61%, (c) control and prevention of mouth and hoof disease (FMD) by 43%, and (d) post-harvest management by 26%.

Keywords: Bali Cattle Farmer, Knowledge Improvement, Pre-test, Post Test.

INTRODUCTION

Bali cattle are cows that can adapt to tropical environments and have great potential to be developed Nugraha et al. (2019); Tethool et al.(2022). The potential of this Bali cow can be developed through a direct approach to farmers so that the knowledge and skills possessed by farmers can increase. The approach that can be done can be through counseling and technical guidance. Sudarmanto et al. (2022); Akbar et al. (2021); Rahayu et al. (2018); Efu and Simamora (2021) counseling is one of the efforts made to improve the knowledge and skills possessed by farmers. Permentan (2018) and Teguh et al. (2019) also explain the learning process for main actors and business actors to organize themselves to increase income, welfare, and awareness in preserving environmental functions. In addition, regulations related to the development of Bali cattle have also been explained in the Ministry of Agriculture regulation (2016), which stipulates South Konawe Regency, Southeast Sulawesi, as a source area for Balinese cattle breeds which has been stipulated in Law No.18 of 2009 concerning animal health and PP N0.48/2011 concerning Animal Genetic Resources and Livestock Breeding, as well as Minister of Agriculture No. 48/OT.140.9/2011 junto No.64/Permentan/OT.140/11/2012 concerning Seed Source Area.

According to the survey results, information was obtained that Palangga District is one of the producing areas of Bali cattle breeds. The research took 2 villages from 16 villages in Palangga District, namely Kiaea Village and Wonua Morini Village. Through counseling and technical guidance, efforts are made to improve farmers' knowledge in Kiaea Village and Wonua Morini Village. This counseling and technical guidance activity is designed to provide feedback between farmers and the material delivered by the resource persons.

The extension program and technical guidance carried out will be evaluated so that it can be known that the level of knowledge of farmers has increased or vice versa Akbar et al. (2021); Yuliandri and Rahmah (2021); Pratiwi (2016) stated that the solution that can be provided in overcoming the problem of low knowledge of farmers is by providing counseling on problems that are being faced by the community. Hafid et al. (2020) added certain parties, especially in providing material to improve knowledge and skills through technical guidance activities and relevant application of livestock technology. Nurjaya et al. (2021), Amam et al. (2021), and Leleng et al. (2021) added that the competencies and skills possessed by farmers are key factors in the success of a business that is run, with adequate abilities, performance achievement will also be maximized.

MATERIALS AND METHODS

This research was conducted in September 2022 and April 2023. The respondents of this study were all farmers who participated in counseling and technical guidance in Kiaea Village and Wonua Morini Village. Respondents were given questions through questionnaires by the counseling materials and technical guidance carried out.

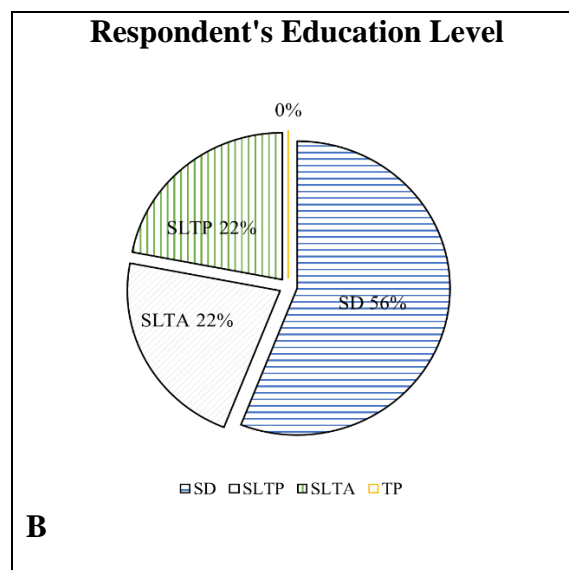
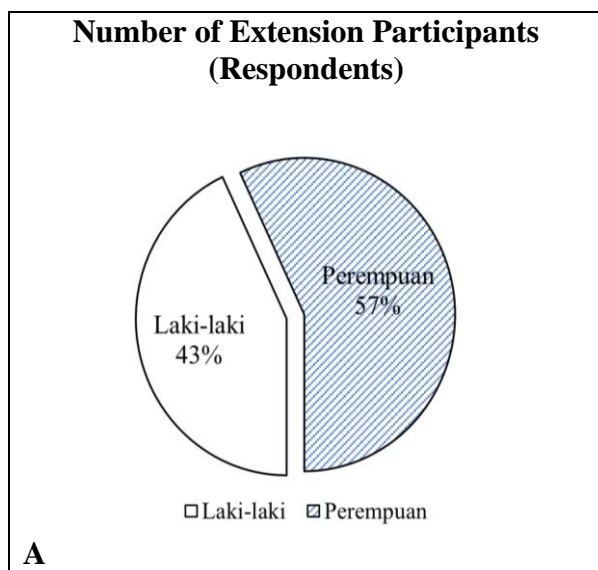
The data sources used are derived from primary and secondary data. Primary data were obtained from questionnaires distributed to farmers before (pre-test) and after (post-test) extension activities and technical guidance were carried out. Secondary data comes from the Central Bureau of Statistics and journal reading sources. The data obtained in this study consists of two types of data, namely pre-test and post-test, which will later be evaluated so that an increase in farmer knowledge can be known. The media used is the distribution of colored brochures containing material related to counseling and technical guidance to make it easier for farmers to understand the material the resource persons delivered.

The research variables observed were data on farmer knowledge related to (1) management of maintenance and selection of Balinese cattle breeds, (2) forage and animal feed management, (3) control and prevention of mouth and hoof disease (FMD), and (4) business potential of Bali cattle and post-harvest management. Then on the technical guidance variables related to (1) making forage and animal feed, (2) injecting (deworming, vitamin B Complex, anti-lice, and vitamins A, D, and E), (3) making shredded, (4) making Amonase feed, and (5) making manure.

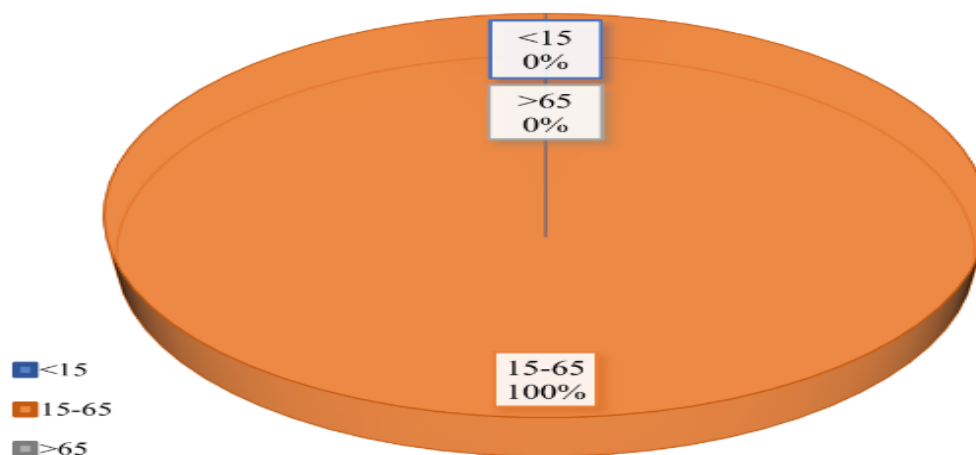
The data analysis carried out includes 2 aspects, namely: (1) the stages of implementation of extension activities and technical guidance as contained in the first research objective will be described descriptively, and (2) increasing the knowledge of cattle farmers will be analyzed using pre-test and post-test methods, namely by providing questions through questionnaires before and after the implementation of counseling and technical guidance.

RESULTS AND DISCUSSION

The results of the percentage analysis of respondents' characteristics were 10 male respondents (43%) and 13 female respondents (57%). The percentage based on the education level of respondents based on the highest level of education is an elementary school (56%), junior high school (22%), and senior high school (22%).

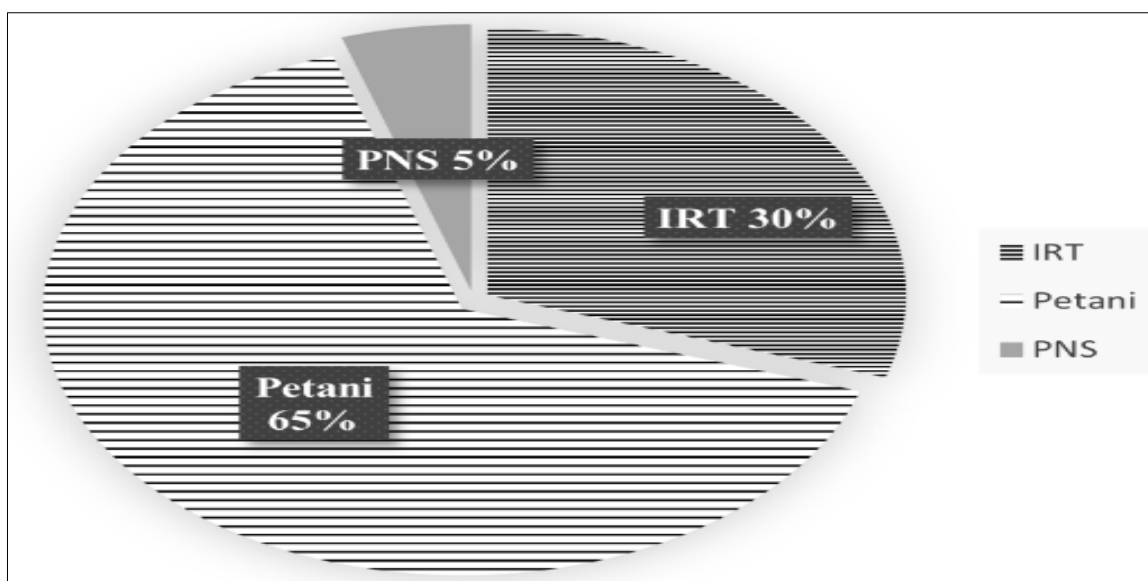


The percentage is based on the age characteristics of farmers, with the highest percentage being at the age of 15 – 65 years (100%). According to Ervina et al. (2019) and Sani et al. (2021), A person's productive age from 15-65 years is still possible to experience an increase in skills in raising livestock because this age is classified in the characteristics of physical condition and thinking skills that are still quite strong. The higher a person's age, the more likely they are to think more maturely and be able to act wisely.



Age characteristics of breeders

Based on the results of the questionnaire tabulation that farmers have filled out, the percentage obtained is 65% of farmers, 5% work as civil servants, and some answer as IRT (housewives) only. According to Sani et al. (2021c), Generally, farmer-farmer families, in addition to taking care of the household, also have other jobs in cattle farming and rice field businesses. The experience of farmers in trying Bali cattle <10 years as much as 83%, 11-20 years as much as 4%, and farmers who have experience for >20 years as much as 13%. The type of work and experience of breeding farmers in Kiaea and Wonua Morini villages is <10 years, impacting farmers' knowledge level. One of the main pillars in accelerating the growth of quality breeders is carrying out non-formal educational activities or counseling.



The main types of work of farmers in Kiaea Village and Wonua Morini Village

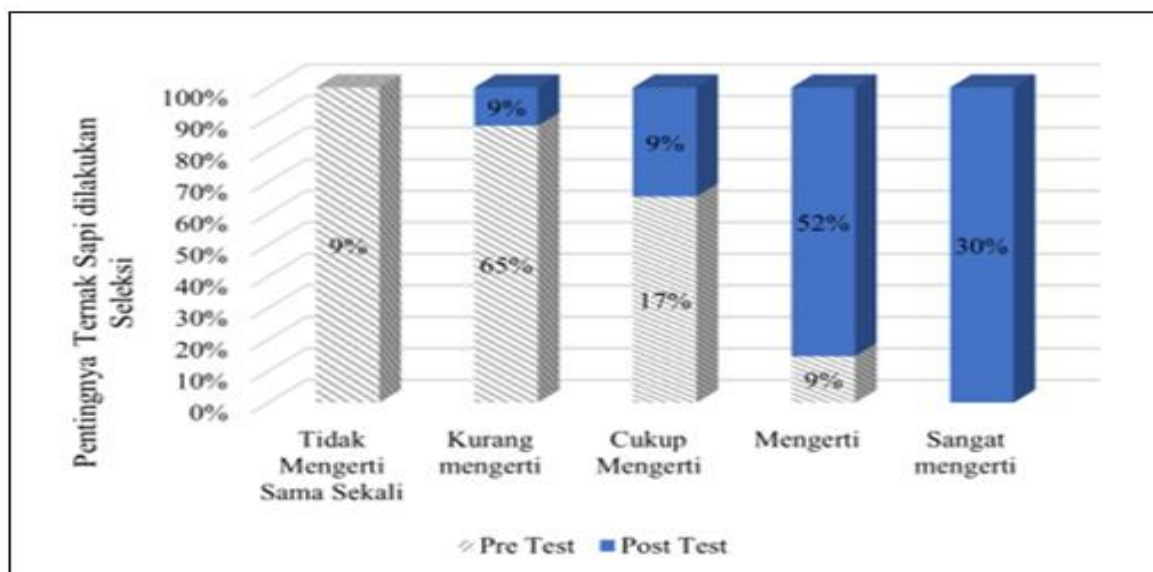
Sani et al. (2022) Livestock experience is one factor determining a livestock business's success. The longer the cattle farm lasts, the more experienced the farmer will be in cattle farm management. In addition, the level of experience in raising cattle also positively affects the development of his livestock because a farmer's experience in raising cattle affects the level of business success.

Table 1. Percentage of Respondents' Experience in Trying Bali Cattle

No	Breeding Experience (Years)	Number of Respondents (People)	Percentage (%)
1.	<10	19	83
2.	11 - 20	1	4
3.	>20	3	13
Total		23	100

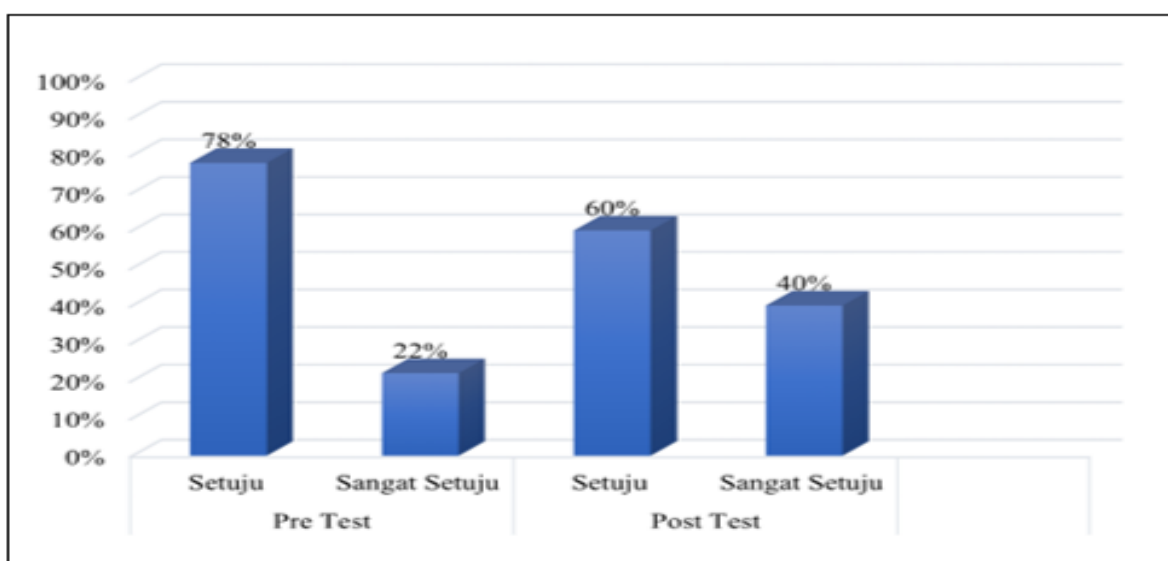
Source: Primary Data Processed, 2023

The percentage of farmers' level of knowledge about the importance of Bali cattle selected showed that 65% of farmers said they did not understand, 9% said they did not understand at all, 17% said they understood enough, and only 9% said they understood. The facts show an increase in knowledge after the counseling to 52% knowing and 30% claiming to understand. Farmers who previously stated they did not understand tended to decrease from 65% to 9%. Farmers who said they understood enough before counseling, as much as 17%, decreased to 9% after counseling. Human resources will largely determine the success of livestock development. Farmers are the main actors in the activities of the farm itself. Currently, most livestock activities in Indonesia are still small-scale livestock farming or people's livestock businesses. Hence, the biggest challenge to achieving successful farm development is encouraging and developing so breeders become more qualified or powerful.



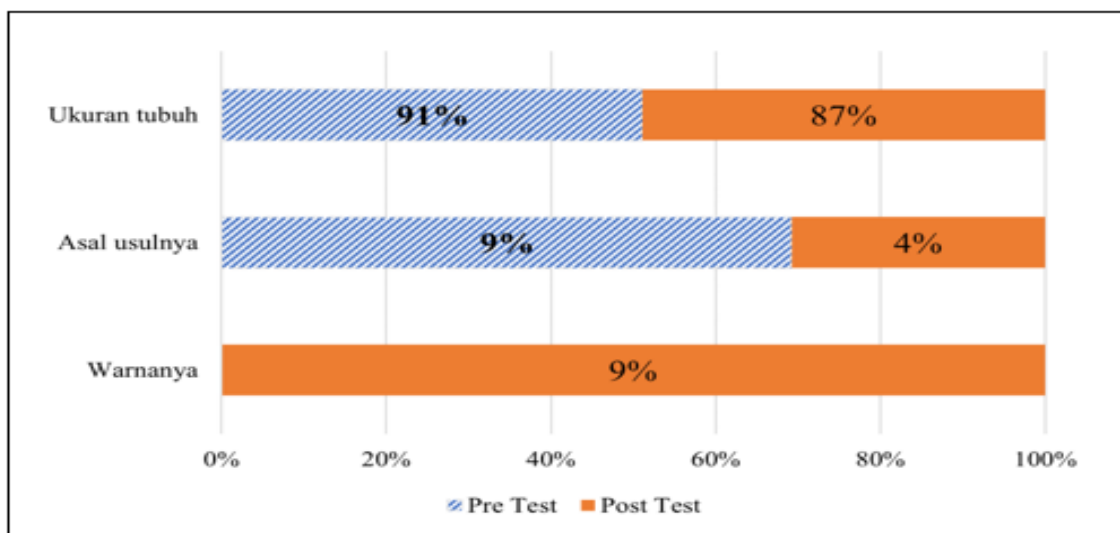
Percentage of Farmer Knowledge Level about the Importance of Bali Cattle Selected

The results of the pre-test extension analysis found that 78% of farmers agreed to the selection, and 22% said they strongly agreed. Changes in farmers' attitudes occurred after being given enlightenment and education through counseling delivered. The increase in farmer knowledge occurred due to a decrease in the perception of breeders who previously agreed 78% to 60% and breeders who expressed strongly agreed to the selection of seeds increased from 22% to 40%.



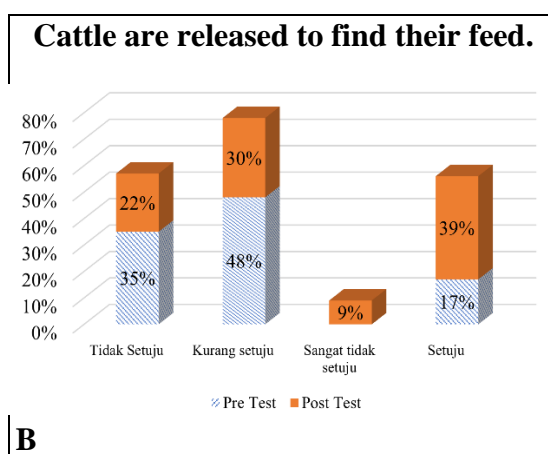
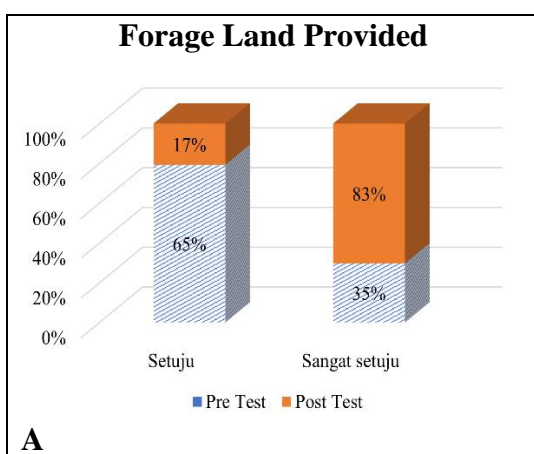
Percentage of Farmer Approval Rate for Selection in Cattle Raised

The pre-test analysis results showed that the farmers' knowledge level before being given extension material was 9% of farmers who selected livestock based on their origin and 91% based on body size. Different percentages in the results of post-test analysis, namely after education or counseling. Breeders who responded that selection was based on their history of origin decreased from 9% to 4%, selection based on body size decreased from 91% to 87%, and selection based on previous colors increased to 9%.



Percentage of Farmer Knowledge Level Regarding Selection Criteria for Cattle Raised

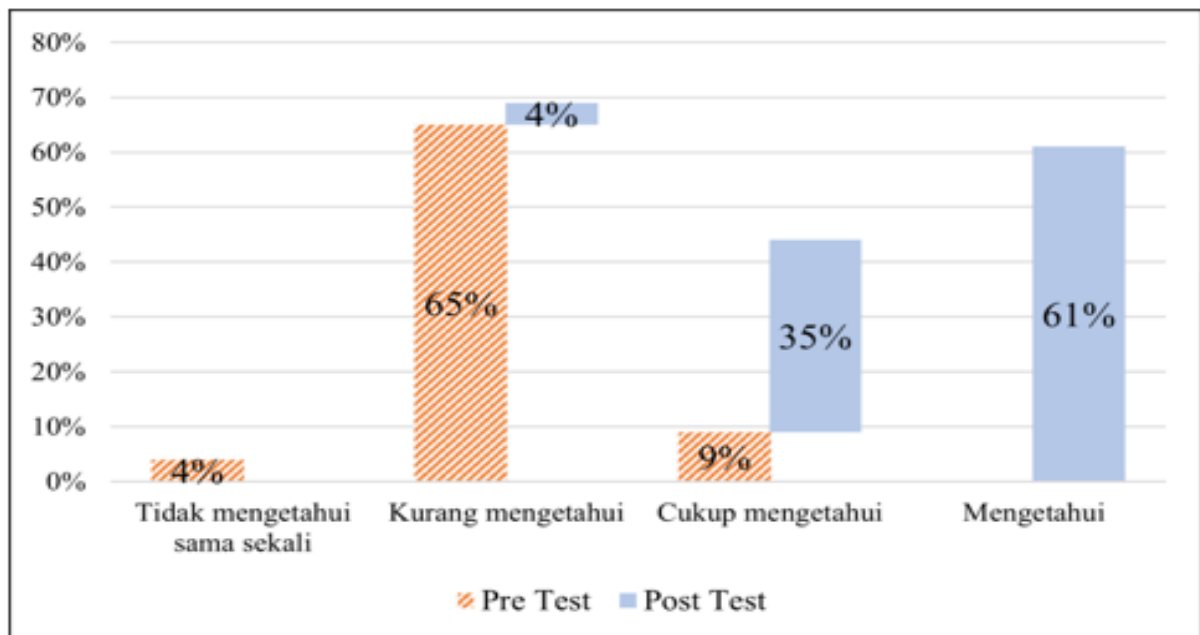
The analysis results showed a change where, at the beginning of the test, as many as 65% of farmers said they agreed to provide forage land but decreased by 17% after providing counseling and additional education to farmers. In addition, some farmers strongly agree with providing forage land for livestock, as much as 83%. The results of the pre-test analysis on the level of knowledge related to livestock that will be released to find their feed, as much as 35% of farmers disagree then at the time of the post-test, decreased to 22%, farmers who chose to disagree as much as 48% decreased to 30% and 9% for farmers who chose to disagree at the time of post-test strongly. Breeders who voted in favor of 17% increased to 39%.



Percentage Change in Farmer's Knowledge Level on Forage and Animal Feed Management

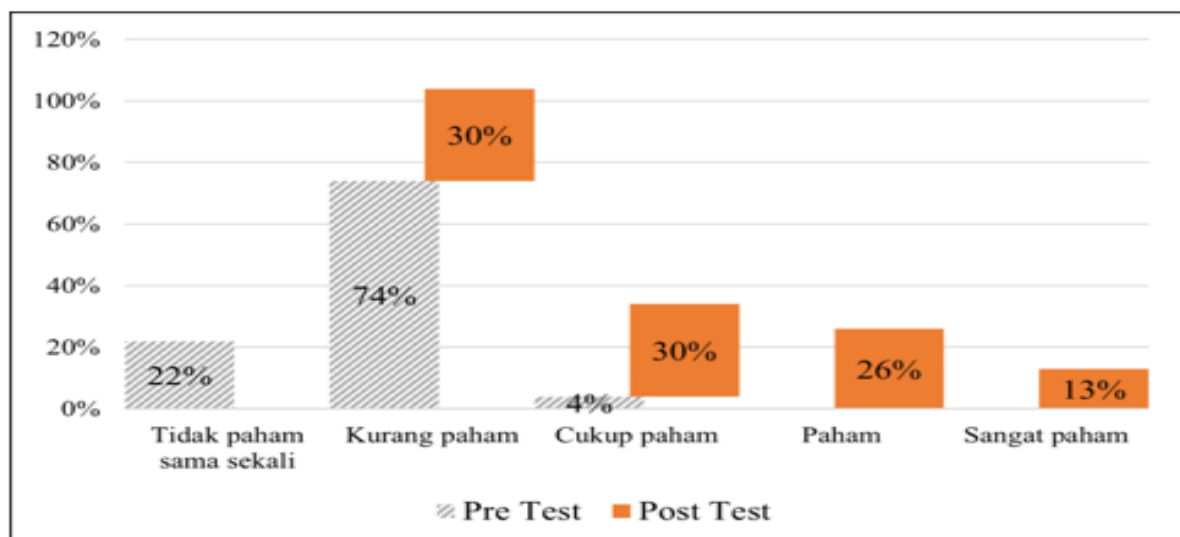
Data from the pre-test analysis showed that as many as 4% of farmers said they did not know at all, and 65% of farmers said they did not know enough, which then changed to 4% after providing counseling. Farmers who choose enough to know as much as 9% increase to 35% after extension. Based on the percentage of post-tests, farmers' knowledge level has changed significantly after attending counseling and technical guidance, which as many as 61% stated to know. From the pre-test and post-test results data that have been given, data on the increasing knowledge of farmers related to the types of forage feed as feed for Bali cattle is

increasing, which can be seen in the highest percentage in the post-test analysis as many as 61% know and 35% know enough.



Percentage Change in Knowledge Level of Forage Types of Bali Cattle

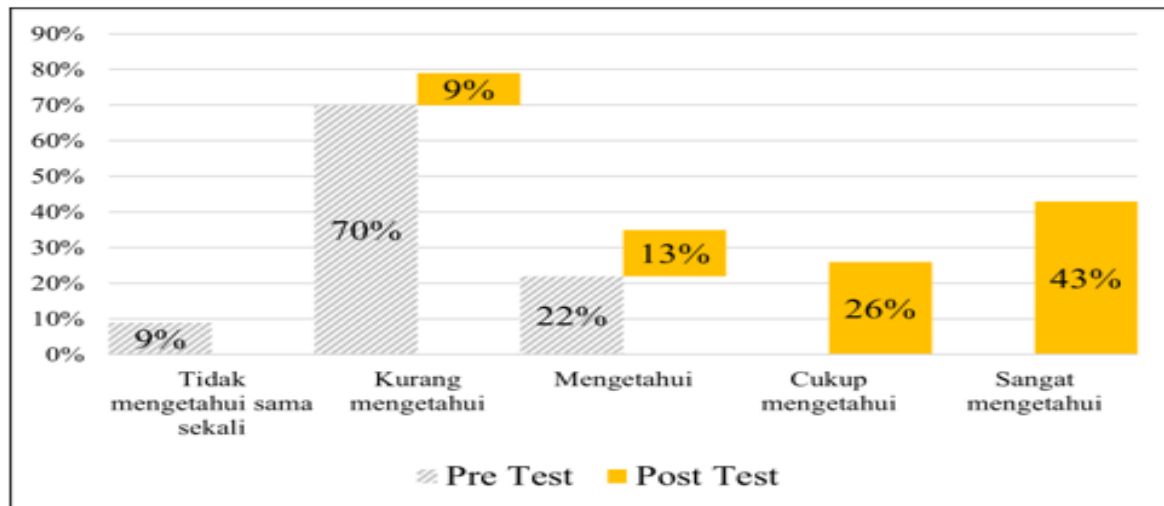
Similarly, when farmers were asked whether they understood the amount of cattle feed needed, the results of the pre-test analysis were 22% of farmers chose not to understand at all, 74% of farmers chose not to understand, and increased after counseling with a percentage of 30%. Then, breeders who choose enough to understand that 4% increases to 30%. The increase in knowledge occurred after the counseling was completed and after the results of the post-test analysis. As many as 26% said they understood, and 13% understood very well.



Percentage Change in Farmer Knowledge Level Related to the Number of Bali Cattle Feed Needs

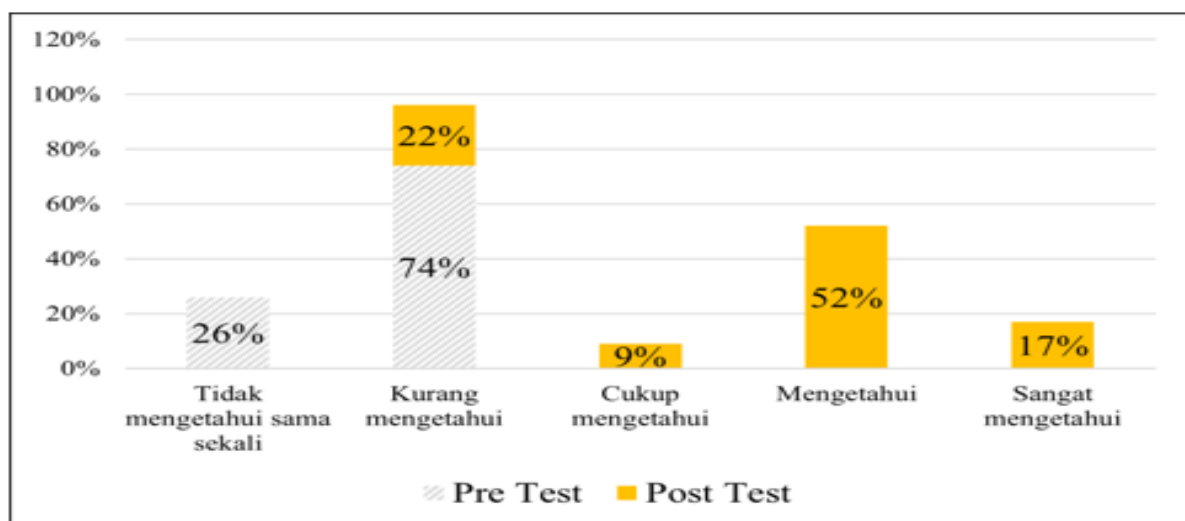
The results of the pre-test and post-test analysis of the level of knowledge of farmers before and after the implementation of counseling activities and technical guidance on farmer

knowledge related to oral and hoof disease (FMD) control obtained pre-test results as many as 9% of farmers chose not to know at all, 70% of farmers said they did not know which then changed to 9% after farmers followed counseling and technical guidance. Farmers who chose to know as much as 22% decreased to 13% but increased by 25%, and 43% know very well. Based on the percentage results above, the increase in farmer knowledge before and after extension activities were carried out increased related to the control of mouth and hoof disease (FMD) in Bali cattle.



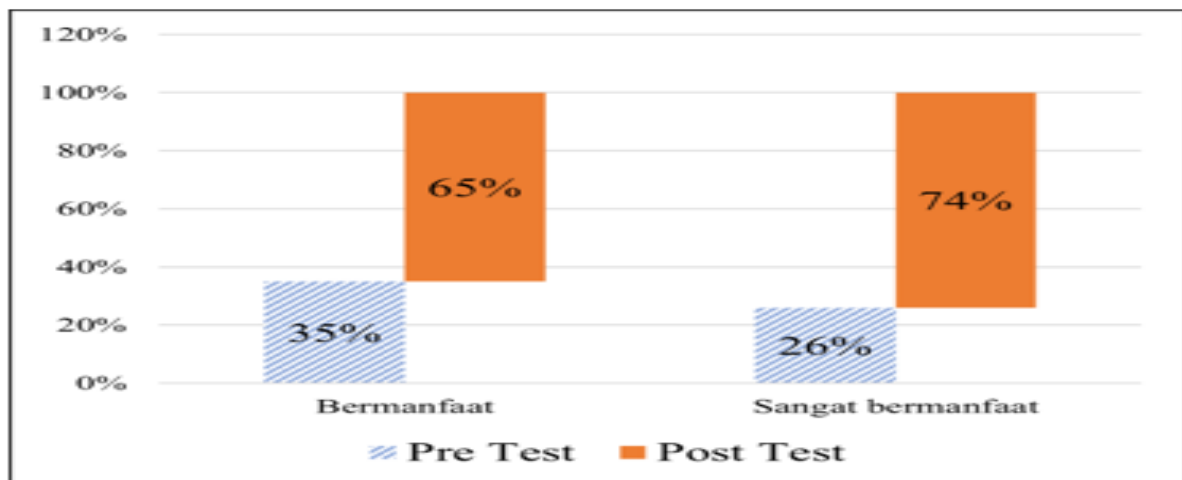
Percentage Change in Farmer's Level of Knowledge About Bali Cattle Mouth and Hoof Disease (FMD) Control

Prevention of Bali cattle mouth and hoof disease (FMD) results were obtained in the pre-test analysis or before participating in counseling activities. As many as 26% of farmers said they did not know about the prevention, 74% said they did not know, and decreased to 22% of farmers who said they did not know. After participating in extension activities, farmers experienced an increase in knowledge. As much as 9% said they knew enough, 52% said they knew, and 17% said they knew very well.



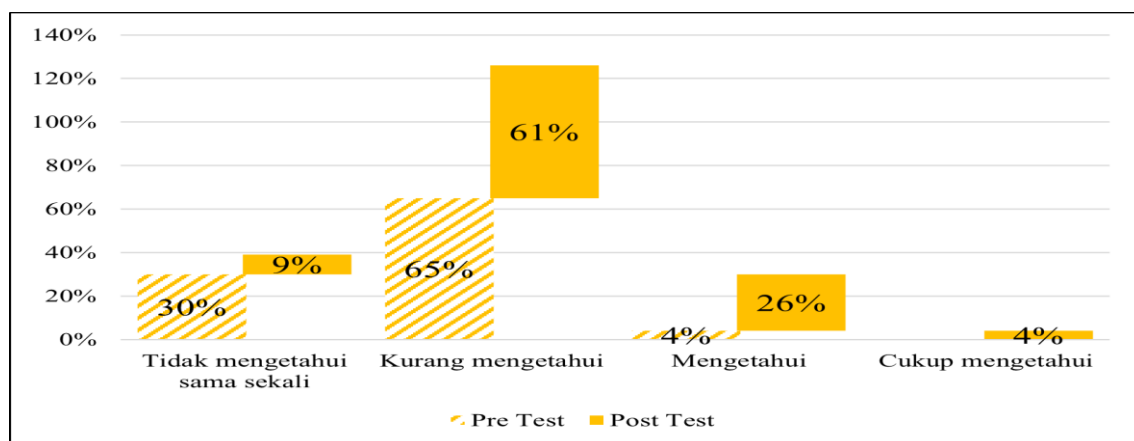
Percentage Change in Farmer's Level of Knowledge on the Importance of Prevention of Bali Cattle Mouth and Hoof Disease (FMD)

The results of pre-test and post-test analysis on the level of usefulness of farmers' participation in extension activities and technical guidance, as many as 35% of farmers stated that extension activities were beneficial, which then increased by 65% after counseling. Breeders who voted very useful by 26% increased to 74%. So, breeders' knowledge increased, as evidenced by a very useful percentage of 74%.



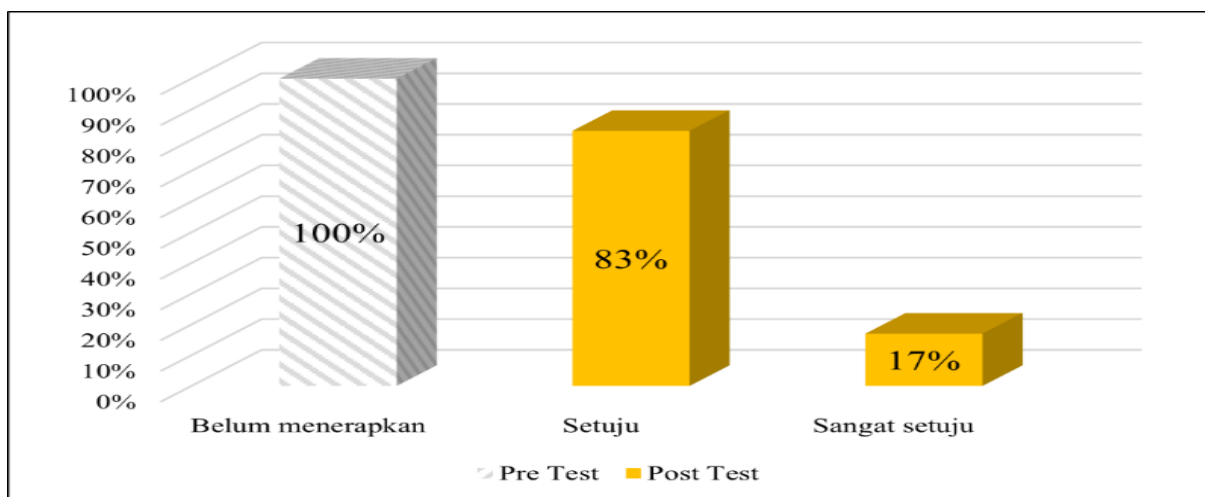
Percentage Level of Community Participation in Extension Activities

The analysis result of 30% did not know at all and increased to 9%. Farmers who still do not know 65% and after extension to 61%, 4% of farmers who choose to know at the beginning, and an increase of 26% of farmers say they know. The farmer's statement changed to 26% of farmers knowing and adding 4% of farmers who said they knew enough.



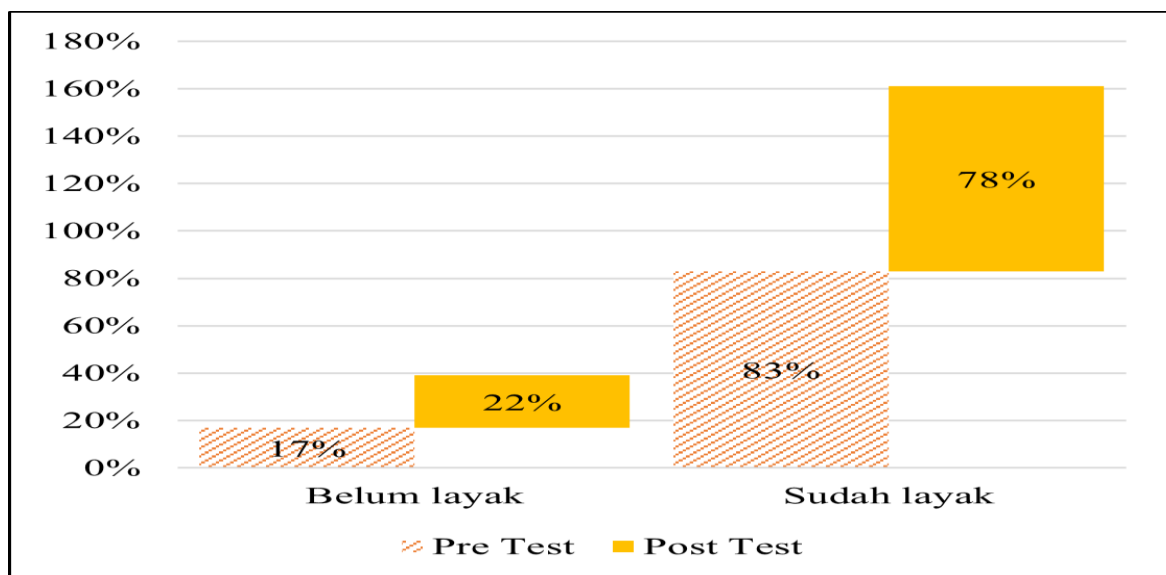
Percentage of Farmer Knowledge Level about Bali Cattle Business Potential

The percentage results regarding farmers' knowledge level about post-harvest management of Bali cattle show mixed analysis results. The analysis includes a pre-test analysis before counseling activities and technical guidance are carried out, and a post-test analysis is an analysis after counseling activities and technical guidance is carried out. The results of the pre-test analysis are based on the percentage of as many as 100% of farmers who do not understand how to implement the agribusiness system on their livestock. In contrast, when farmers have been given an understanding of the agribusiness system, as many as 83% of farmers agree to implement it, and as many as 17% of farmers say they strongly agree.



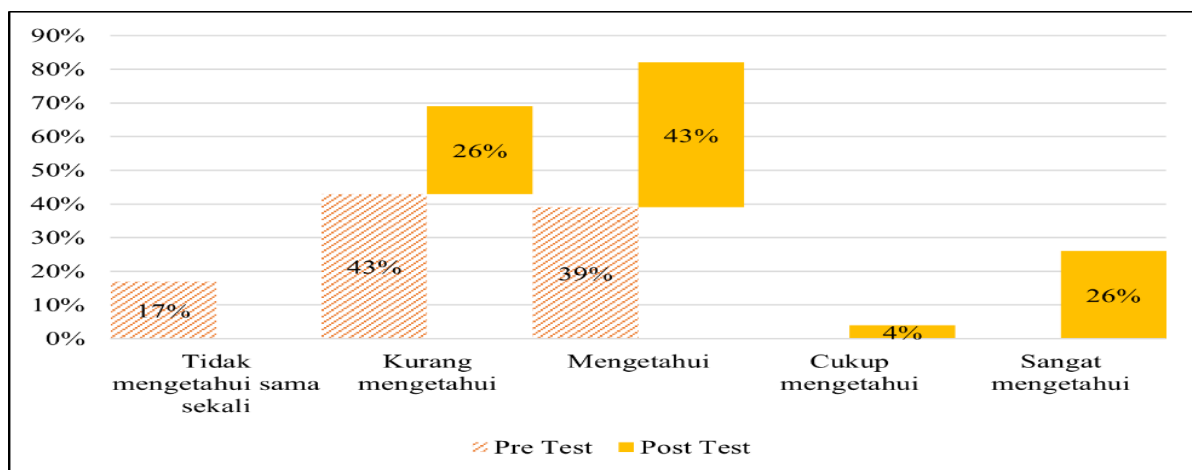
Percentage of Farmer Knowledge Level about Management with Bali Cattle Post-Harvest Agribusiness System

Similarly, the results of pre-test and post-test analysis are related to whether or not the business is feasible and not carried out. Information from farmers obtained from questionnaires at the beginning of extension activities (pre-test) that have been filled out that as many as 17% of farmers say their business is still classified as not feasible, and 83% of farmers choose that their business is feasible to continue. In contrast to the answer when farmers were given counseling and technical guidance, 22% said it was not feasible, an increase from the previous 17%, and according to the statement, it was feasible as much as 78%, which previously as many as 83% said it was feasible.



Level of Knowledge of Farmers Related to the Worthiness and Absence of The business Carried Out

The results of the pre-test analysis when asked about good shredded storage techniques, on average, farmers chose to know as much as 39%, 44% said they did not know, and 17% said they did not know at all. In contrast, after participating in pre-test counseling, the statement of farmers increased to 44% knowing, 26% did not know the initial as much as 44%, 4% knew enough, and 26% farmers chose to know very much.



Level of Farmer Knowledge about Good Shredded Storage Techniques

The results of the evaluation are very influential, shown through the active participation of farmers during activities: (a) demonstration of HPT land preparation, manure making, (b) making complete ammonia feed and making pinch cages for injection activities at the time of injection (anthelmintics, vitamin B Complex, anti-lice and vitamins A, D, and E), ammonia making and during demonstrations of making shredded beef. According to (Rahim et al. 2021), The results of the assessment of the role of extension workers at the research location illustrate that extension workers have carried out their duties well, which can be supported by several characteristics of individual extension workers such as knowledge, skills, roles and values of extension workers both in the process of technical implementation of the field.

The results of the social impact evaluation show that the responses of the surrounding community regarding the implementation of extension activities and technical guidance carried out are very beneficial for farmers in Kiaea village and Wonua Morini village. The response given by the surrounding community was very positive, and appreciated this activity. The implementation of this activity tends to increase the economic value of the family and the welfare of the farmer's family by utilizing all the business potential that exists in the Balinese cattle raised.

Activities that have been arranged in such a way have succeeded in making social contributions for farmers through the opening of new job opportunities and the ability of farmers to be entrepreneurial independently, which in turn can increase the economic value of farmer households as a whole, especially the people of Kiaea village and Wonua Morini village, Palangga District.

CONCLUSION

The stages of research implementation are the conduct of extension activities and technical guidance by delivering material directly with the discussion method followed by field activities, namely technical guidance, and to measure the increase in knowledge and skills of farmers due to counseling and technical guidance, a pre-test evaluation is carried out and followed by a post-test evaluation. Based on the results of the recapitulation of pre-test and post-test data analysis, it shows an increase in the knowledge and skills of related farmers: (a) management of maintenance and selection of Balinese cattle breeds increased by 30%, (b)

forage and animal feed management by 61%, (c) control and prevention of mouth and hoof disease (FMD) 43%, and (d) post-harvest management by 26%.

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