



Knowledge Level of Breeders on the Implementation of Artificial Insemination in Pinrang Regency, South Sulawesi Province, Indonesia

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ABSTRACT

This study aimed to determine the Knowledge Level of Farmers in the Implementation of Artificial Insemination in Lembang District, Pinrang Regency. This research was carried out in June - July 2021, and the type of this research is descriptive quantitative, namely the type of research that explains or describes a phenomenon, in this case, the level of farmers' knowledge on the implementation of artificial insemination. The sample in this study were 58 beef cattle breeders. Data were collected through observation, interviews, literature studies, and documentation. The data analysis used in this research was descriptive statistics using grouping, simplification, and data presentation such as frequency distribution tables and measurements using a Likert scale. The results of the analysis that have been carried out concluded that the level of knowledge of breeders on the purpose of AI, IB benefits, signs of lust, the timing of IB, pregnancy detection was categorized as moderate, while the level of knowledge of farmers on IB loss, and IB equipment was classified into a low category.

KEYWORDS: Knowledge level of breeders, breeders, insemination, beef cattle

INTRODUCTION

In Indonesia, a severe problem in the livestock sector is low productivity and genetic quality. To overcome this problem, artificial insemination (AI) is carried out to increase livestock productivity and farmer income [1][2]. Artificial insemination is a program that aims to increase livestock production and farmers' income [3][4]. Generally, beef cattle breeding in Indonesia uses two methods, namely through natural mating (KA) and artificial insemination (AI) technology. Currently, the government is aggressively increasing the birth rate through AI. It has many advantages over Natural Marriage (KA), including improving the genetic quality of beef cattle where the bulls used are superior, increasing the selling price of calves, avoiding transmission of venereal diseases. However, at this time it is still often found breeders who mate with males, the reason for the failure of AI marriages or farmers wanting to keep local cattle, it is known that the average marriage with AI is more (60%) and the rest (39.1%) with males [5][6].

Artificial insemination as a reproductive technology in its application is one of the instruments in implementing policies in the nursery sector. From the aspect of counseling, AI technology has replaced the method of cow marriage, which has been carried out for generations, namely natural mating. Another factor is that beef

cattle raising and mating methods have become part of the social and cultural system of the community concerned. Therefore, the process of changing the behaviour of beef cattle farmers in responding to AI as an innovation in reproductive technology is not a simple matter. Many factors influence this and the process takes time. Several factors that influence farmers' response to the introduction of innovation are generally affected by technical, social, economic and cultural problems [7],[8],[9],[10]. Not all Artificial Insemination (AI) programs are implemented simultaneously in all regions in Indonesia. There are still many areas scattered in Indonesia that are still in the early stages of implementing the program, one of which is the Lembang sub-district, Pinrang Regency, South Sulawesi Province. Therefore, it is necessary to know the level of knowledge of farmers on the implementation of Artificial Insemination.

RESEARCH METHODOLOGY

The research was carried out in Lembang District, Pinrang Regency, held in June - July 2021. The location determination was carried out purposively because this location had just carried out the Artificial Insemination (AI) program for beef cattle in Lembang District, Pinrang Regency. Breeders in the implementation of artificial insemination in Lembang District, Pinrang Regency. In this study, the method used is the survey method, namely by taking a direct approach to take a direct approach to the community in Lembang District, Pinrang Regency. The type of data used is qualitative data, namely data in the form of words, sentences, and statements related to research obtained through various data collection techniques such as interviews, discussions and observations and data Quantitative data is data in the form of numbers based on the results of questionnaires from the community which includes age, and so on.

The data sources used in this study are primary data and secondary data. The data collection methods are observation, interviews, library studies and documentation. Population means in this study is the number of beef cattle farmers who participate in the Artificial Insemination program in Lembang District, Pinrang Regency. The number of participating beef cattle breeders was 58 farmers, so the sampling technique was carried out intentionally, namely purposive sampling of farmers who had done AI. Data analysis used in this study was descriptive statistics using grouping, simplification, and data presentation such as frequency distribution tables. and measurement using a Likert scale

RESULTS and DISCUSSION

a. Farmer's Knowledge Level of the Signs of Eess Farmer's

Knowledge of the signs of estrus is essential for farmers to know the right time to do artificial insemination, estrus cycle, length of estrus, and an excellent fertile period in livestock. Measuring the breeder's level of knowledge of pleasure signals is intended to measure the extent to which the farmer's understanding of pleasure signals in livestock is measured. The measurement variable consists of 4 questions with a 1 to 3. The scores obtained in Lembang District, Pinrang Regency, can be seen in Table 1.

Table 1: The results of the assessment of the level of knowledge of farmers on signs of lust in cattle

No.	Description	Score	Category
1.	Breeders know the signs of estrus in cattle	142	High
2.	Farmers know about the cycle, duration of lust, and ovulation in cattle	108	Medium
3.	Farmers know that affect estrus or estrus in cattle	90	Low
4.	The fertile period in cattle that experience estrus or lust	90	Low
Quantity		428	
Average		107	Medium

Source: Processed primary data, 2021.

Based on Table 1, it can be seen that the measurement of the level of knowledge of farmers on signs of lust is in the medium category. Knowledge of breeders who are considered very good; that is, breeders, know the signs of lust. Breeders have learned well about the symptoms of lust in dairy cattle after getting direct practice in the field, such as mucus that comes out of the female genitalia and armed with previous experience of raising livestock.

The knowledge that is considered quite good is that the farmer knows the estrus cycle, duration of estrus and ovulation in cattle. The farmer stated that this knowledge was obtained based on livestock experience and discussion forums with livestock extension workers. The knowledge that is considered lacking is in terms of knowing estrus or estrus in cattle, and also the fertile period in cattle experiencing estrus or estrus because when doing artificial insemination in the field by inseminators, breeders find it difficult to understand the overall knowledge described and it is difficult for farmers to understand the vocabulary used by the instructor. The detection of lust is the key to the success of AI; farmers can already know the signs of cattle in heat. So that the livestock can immediately call the inseminator and increase the percentage of AI success and increase the productivity of the cattle themselves [11],[12].

b. Farmer's Knowledge Level of AI Time

The timeliness of artificial insemination is one factor that determines the success of pregnancy from the implementation of artificial insemination. The right time to perform artificial insemination on female cows is when the cow is in heat. The measurement of the level of knowledge of farmers on AI time is intended to measure the extent to which the level of knowledge of farmers on AI time. The measurement variable consists of 4 questions with a 1 to 3. The scores obtained in Lembang District, Pinrang Regency, can be seen in Table 2.

Table 2: Results of the assessment of the level of knowledge of farmers on AI

No.	Description of	Score	Category
	Farmers know the right time to do artificial insemination	115	High
	Farmers know the timeframe after artificial insemination when it doesn't work	112	Medium
	Farmers know when it's not the time to do AI right	102	Medium
	Farmers can predict cattle that are no longer able to use the application of artificial insemination technology	91	Low
	Quantity	420	
	Average	105	Medium

Source: Processed primary data, 2021.

Based on Table 2, it can be seen that the level of knowledge of farmers regarding the timing of artificial insemination is considered moderate. Breeders can know the right time to do artificial insemination armed with experience during raising and knowledge gained during discussions. Likewise, with the understanding of the vulnerable time after artificial insemination, and the timing is not right. However, further studies or discussions are needed so that all breeders can find out more about the right time to do artificial insemination.

The knowledge that is considered lacking is that breeders have not been able to predict livestock that can no longer be used for AI. This makes it difficult for breeders to correctly predict livestock that can no longer be used even though they are already able to know the signs of lust in livestock and are susceptible to good insemination times. Many factors influence the success of AI, including the period of lust in female cows to the time of AI implementation. This is following the opinion of [13] that the determinants of the success of AI concerning the timing of AI are: anatomical abnormalities of the reproductive tract, ovulation disorders, abnormal eggs, and abnormal sperm.

c. Farmer's Knowledge Level of AI Equipment

Table 3: Results of Assessment of AI Equipment

No.	Description	Scores	Category
1.	Farmers know the tools needed to be done AI	105	Medium
2.	Do farmers know the function of each type of equipment used at the time of AI	73	Low
3.	Farmers were able to use every tool at the time of AI	74	Low
4.	Methods used at the time doing AI	70	Low
Total		322	
Average		80.5	Low

Source: Processed primary data, 2021.

Based on Table 3, it can be seen that the level of knowledge of farmers on AI equipment is considered low. Farmers already know the equipment needed when doing AI because most farmers who participate in artificial insemination activities have seen the tools used by the inseminator. Lack of knowledge is that most farmers do not know the function of each type of equipment used by the inseminator. Farmers cannot use every tool because they have never tried to practice it directly and tend only to pay attention. Breeders do not know the method or method used in performing artificial insemination, and this is a severe obstacle to farmers in knowing deeply about an understanding of artificial insemination equipment; breeders have never tried or practiced the process of doing artificial insemination by themselves directly; they tend only to use artificial insemination. Look at the inseminator only. This is following [13] the limited knowledge of breeders is a fundamental weakness to note and the distribution of guidance to farmers in each village has not been maximized so that there is a factor of lack of knowledge of breeders about AI, breeders are still at risk of using AI marriages and the development of AI mating methods, it's still hard to develop.

d. Farmers' Knowledge Level of Pregnancy Detection

Detection is an important component of reproductive management, especially in the dairy industry, intending to evaluate the success of artificial insemination. The measurement of the level of knowledge of the breeder towards the detection of pregnancy is intended to measure the extent to which the level of knowledge of the farmer towards the detection of pregnancy is. The measurement variable consists of 3 questions with a score of 1 to 3. The scores obtained in Lembang District, Pinrang Regency, can be seen in Table 4.

Table 4: Assessment Results Measurement of the level of knowledge of farmers on pregnancy detection

No.	Description of	Score	Category
1.	Farmers know the characteristics of pregnancy in cattle that have been artificially inseminated	122	Medium
2.	Do farmers know how to detect pregnancy in cattle that have been artificially inseminated	105	Medium
3.	Farmers know the factors of pregnancy in cattle	98	Low
4.	Effects that occur on cattle that fail in pregnancy artificial insemination	85	Low
Quantity		410	
Average		102.5	Medium

Source: Processed primary data, 2021.

Based on Table 4, it can be seen that the level of knowledge of farmers on pregnancy detection is considered moderate. Although, breeders know the characteristics of pregnancy in livestock, breeders know how

to detect pregnancy in cattle that have been artificially inseminated, obtained from experience during breeding and understanding gained in the field together with extension workers or inseminators.

The assessment that is considered lacking is knowledge about pregnancy factors and the effects that occur on cattle that fail in pregnancy. This is caused by breeders who cannot explain the factors that are the assessment of cattle that are experiencing pregnancy; breeders tend only to know that cattle are currently pregnant and the majority of farmers do not know the effect on cattle that fail to get pregnant after artificial insemination. This shows the need for further studies related to pregnancy detection to improve the understanding of all beef cattle farmers in Lembang District, Pinrang Regency. This is in accordance with the opinion of [14] that the expertise of farmers in detecting pregnancy and lust is obtained from experience during livestock which is usually done by visual means.

CONCLUSION

Based on the results of the analysis carried out regarding the level of farmers' knowledge on Artificial Insemination of beef cattle in Lembang District, Pinrang Regency. It can be concluded that the level of knowledge of breeders on signs of lust, the timing of AI, pregnancy detection is categorized as moderate, while the level of knowledge of farmers on AI equipment is classified into low categories. Based on the results of the research obtained, it is necessary to increase discussion forums and socialize regularly for farmers so that all breeders can increase their understanding of artificial insemination in cattle to get better results.

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