Analysis of Some Factors that Affect the Success of the Implementation of Special Programs For Pregnance Cows ("UPSUS SIWAB") in Bali Province, Indonesia

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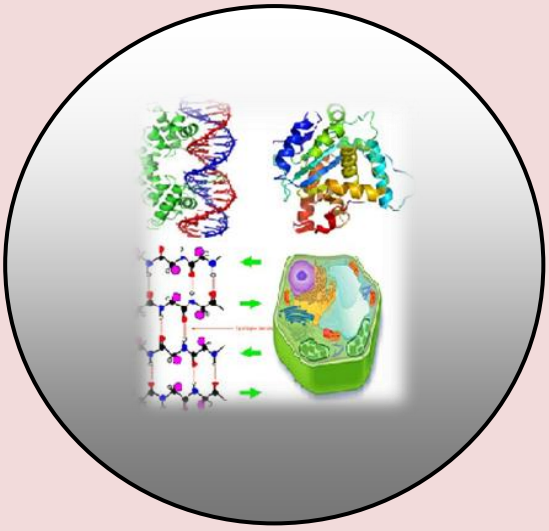

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RESEARCH PAPER
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ABSTRACT

The Pregnant Companion Cattle Special Efforts Program, better known as the "SIWAB UPSUS" is a breakthrough program for the Indonesian government to increase population and cattle production using a participatory approach that emphasizes the active role of farmers, so that every productive female cow is massly mated. The UPSUS SIWAB Program is concerning special efforts to accelerate the increasing of pregnant cattle and buffalo livestock populations, namely a positive, systematic, and comprehensive thinking in overcoming the problem of deep growth rates supply of locally produced meat, which in recent years has not been able to meet national needs. Based on the results of the factor analysis research on the factors that influence UPSUS SIWAB's program in Bali Province, it can be concluded that breeders' factors are the main contributing factors to the failure of the SIWAB UPSUS program targets in the province of Bali, and breeders' behavioral attitudes make a major contribution to the suitability of breeders' components which lead to the optimization of the SIWAB UPSUS program in Bali. Meanwhile, Artificial insemination (AI) officers and pregnancy check (PKb) officers apparently did not contribute significantly to the lack of optimization of the UPSUS SIWAB program in Bali Province.

Key words: Artificial Insimination, Pregnancy and Birth.

INTRODUCTION

The United Nations (UN) through the Population Department of the Division of Social and Economic Affairs, on June 22, 2017 released in its report that 2017 world population amounts to 7.6 billion and this figure is expected to increase to 8.6 billion in 2030. Figures it will rise to 9.8 billion in 2050 (The United Nation, 2017). In the National context, the population of Indonesia in 2017 was 261,890,900 people with a fairly high rate of population growth, which is 1.49%, meaning that every year population growth reaches 3.5-4.0 million. The main problem faced to overcome this population growth is food and energy (Statistics Indonesia, 2017). Meat is one source of food derived from livestock with a fairly complete nutritional content, such as carbohydrates, proteins, fats, and other vitamins. Along with the increasing population and growing economic growth, there has been a change in consumption patterns from year to year indicating that the trend of meat consumption continues to increase. Susenas (2013) reports that consumption of animal protein in the community has reached 12.67 grams per capita per day which has exceeded Indonesia's national standard of 10 grams per capita per day (BPS, 2015).

Observing these conditions, in order to fulfill sustainable beef needs a strategy that can accelerate the addition of cattle population through optimizing the use of insemination technology, developing livestock areas, strengthening the capacity of cattle breeding centers, providing adequate and quality feed, and developing pasture and strengthen the animal health service system.

In its implementation, UPSUS SIWAB is an activity that explores all domestic potential for the independence of food production into strategic activities, so as to provide the overall mutiflier effect. Operationally, UPSUS SIWAB emphasizes efforts to accelerate the increase of cattle and buffalo livestock populations by intensifying the marriage of female cattle/buffaloes by utilizing artificial insemination technology or mating naturally using superior males.

Increasing cattle population in a short time is expected to meet domestic meat needs and reduce meat imports nationally. The UPSUS SIWAB program is the full implementation of reproductive management of livestock which starts from the determination of reproductive status of livestock, quality forage feed, implementation of artificial insemination with pregnancy checks, prevention of reproductive disorders, control of female cattle slaughter, and birth registration as an indicator of the success measure of the program this. The province of Bali with the potential of Bali's cattle region and livestock as beef cattle targets 128,204 artificial acceptors; pregnant cattle totaling 102,562; and the target of calf births was 82,050. The addition of the number of cattle born will add to the supply of ready-to-cut cattle for national needs. Based on the evaluation results from the Bali Province Animal Husbandry and Health Service, that until the end of December 2017, the realization of AI was 94,263 doses with artificial insimination acceptors of 88,177 (68.8%), the number of pregnant cattle was 56,437 (55.03%), and the birth of calves was 20,880 (20.35%). The amount of achievement in the implementation of UPSUS SIWAB in Bali Province in 2017 is not yet optimal, because its achievements have not been in accordance with the targets set. The optimal lack of achievement in the implementation of this program is influenced by several factors, including breeders, executors of artificial insimination, and cattle conditions as objects of service.

From the description above, this study aims to analyze several factors related to the non-optimal implementation of the 2017 UPSUS SIWAB program in the Province of Bali, Indonesia.

MATERIAL AND METHODS

This type of research is an analytic observational study with a cross sectional study design. This design was chosen because it can study the dynamics of correlation between several risk factors with effects, by approach, observation or data collection at the same time (point time approach). In this study, this design is used to study the relationship between factors that have caused the program to be less optimal by observing the achievement of outcome targets simultaneously in several individuals of a population at any given time. The study was conducted in 9 districts/cities throughout Bali, with the selection of research locations carried out by purposive sampling, namely the location of officers who actively carried out artificial insimination (AI) and pregnancy examiner (PKb). The data sources in this study are two, namely primary data and secondary data. Primary data is data taken from individuals using the results of interviews or questionnaires. In this study the primary data, namely breeders and AI and PKb officers. Secondary data was obtained from data obtained from records or reports from the Bali Province Animal Husbandry and Animal Health Service and the Department that handles the functions of District/City Animal Husbandry and Animal Health. The target population or reference population is the whole subject with its characteristics to be known in the study is part of the population to apply the results of the study. Based on the purpose of the study to find out the risk factors for the optimal implementation of UPSUS SIWAB, this population is all AI officers, PKb officers, and the served candidates who are working on the SIWAB UPSUS program.

Research Sampel

The sample in this study was taken by purposive sampling method, namely sampling techniques with certain considerations in accordance with the characteristics or characteristics of the desired population before with criteria: (i) Actively serving UPSUS SIWAB and (ii) Willing to be made a respondent. To find out the size of the sample, the proportion of binomunal proportions is used. If the population size (N) is known, it is searched using the following equation:

$$n = \frac{Z_{\alpha}^{2} p(1-p)}{d^{2}}$$

Note:
n = the minimum number of samples needed
Z1-alph /2 = standard normal distribution value (table Z) on a particular alpha
P = price proportion in the population
d = error (absolute) that can be tolerated
N = population size

Operational Definition of Variables. (i) Farmers' knowledge is: the ability of farmers to know and understand the technical reproduction of livestock obtained from studying books, following technical guidance, counseling, and other information; (ii) Farmers' skills regarding reproductive technicality are: the ability of farmers to know, understand, and apply technical reproduction of livestock (lust detection, lust cycle, reproductive cycle, etc.) obtained from studying books, following technical guidance, counseling and experience in doing business maintenance of cattle; (iii) The knowledge of the Officer about AI is the ability of the AI officer to know and understand and follow up and direct the technical types of artificial insemination obtained from attending education, training or training, and reading books; (iv) The skills of officers regarding AI are: the ability of AI officers to apply artificial insemination techniques in accordance with operational standard procedures by using their knowledge and experience obtained after attending education, training or training, reading books, and attending management seminars or motivational seminars so that fertilization can occur; (v) Staff knowledge about PKb is: the ability of PKb officers to know and understand and follow up and direct the pregnancy examination techniques obtained from attending education, training or training, and from reading books; (vi) The skills of the officers regarding PKb are the ability of PKb officers to apply pregnancy examination techniques to cattle according to operational standard procedures using their knowledge and experience obtained after attending education, training or training, reading books and attending management seminars or motivational seminars so that you can diagnose cow's pregnancy or not pregnant; (vii) SIWAB UPSUS target achievements are: results obtained from the implementation of AI, PKb, and the number of calves born compared to the targets set in 2017.

Research Instrument

The research instrument is a tool used to obtain and collect data in order to solve research problems that meet the requirements of validity, reliability and practicality. In this study the types of instruments used include: observation guidelines, questionnaires, and report documents/daily records of target achievement.

Data analysis

Data obtained from this study will be analyzed by univariate and multivariate analysis. Univariate analysis to describe the frequency distribution of each independent and independent variable. Multivariate analysis is used to connect the independent variables with one dependent variable at the same time. In this study, Factor Analysis was used to analyze the relationship of several independent variables with dependent variables (Sharma, 2010).

RESULTS AND DISCUSSION

Overview of Research Objects

UPSUS SIWAB (Special Efforts to Increase the Population of Pregnant Cows and Buffalo) program is an integrated activity to accelerate an increase in the population of cattle and buffalo in a sustainable manner. Through special efforts to use the active role of the community by optimizing the utilization of livestock resources, with the hope that cattle and productive female buffaloes belonging to farmers are confirmed to be mated, either through AI or mating naturally.

At the end of 2017, of the 5.9 million productive cows and productive female buffaloes, a minimum of 4 million cows are acceptors with a pregnancy rate of 3 million.

Looking at the background of the SIWAB UPSUS Program with its target indicators, the program to accelerate the increase of cattle/buffalo population through AI becomes the main activity with other activities, such as pregnancy checks (PKb) and birth registration as supporters. Thus, the success of UPSUS SIWAB is largely determined by the success of AI activities with indicators of pregnancy occurrence, and the end result in the form of calf birth.

In the Province of Bali (Indonesia), the system of raising cattle almost all day is spent in cages, and food is also provided specifically in the cage. This maintenance system is called the intensive farming system. The number of potential cattle populations in Bali Province that can be used as an acceptor as many as 179505 cow (Dinas PKH, 2017). In 2017, AI activities in the Province of Bali targeted 128204 cow receptors; pregnant cattle as much as 102562 cow; and the birth target: 82050 calves. Referring to the targets imposed above, the implementation of UPSUS SIWAB in Bali Province should not experience significant problems, considering that Bali Province is an intensive AI region category.

AI technology that is applied in Bali has developed in the community, both from the social aspect with intensive cattle farming patterns, so that it is easy to implement. Economically, it is very cheap and provides added value in cattle farming. Besides that, the availability of staff HR and farmer characteristics is quite potential, making it very easy in implementing the AI. However, the data shows that in 2017 the implementation of AI, PKb, and calf birth data in the Province of Bali has not been in accordance with the planned targets. Based on the evaluation results of the Bali Province Animal Husbandry and Animal Health Service, that as of December 31, 2017, the realization of AI was: 94263 doses with AI acceptors as many as 88177 cows (68.78%), the number of pregnant livestock was 56437 cows (55.03 %), and calf births were recorded as many as: 20880 calves (20.35%). The same results in the evaluation in 2018 showed that up to December 31, 2018, the realization of AI receptors was as many as 93638 cows, the number of pregnant cows was 60806 cows and the number of births was 50169 calves. As shown in Figure 1.

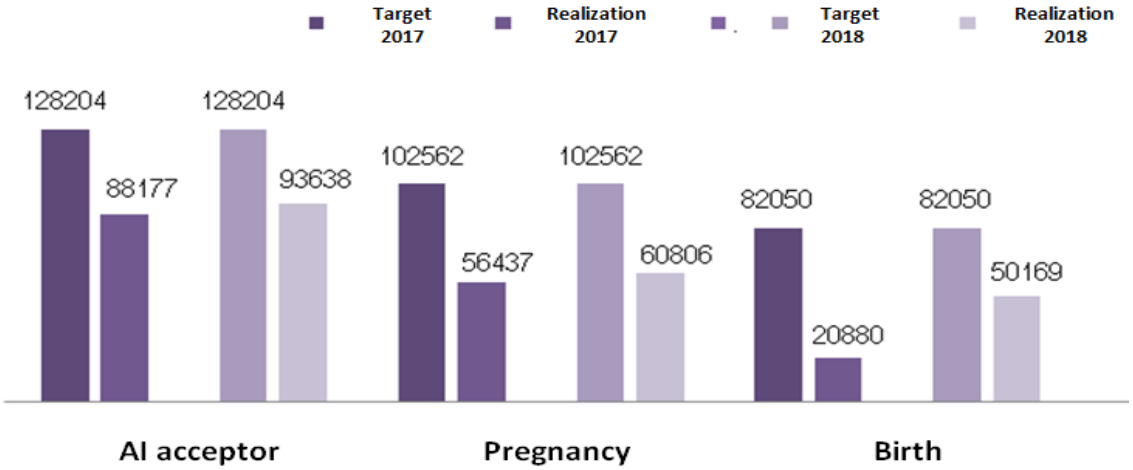

Figure 1. Target and Realization of Implementation of AI, Pregnancy, and Birth of Cows in the Province of Bali in 2017 and 2018.

From the above achievements, it shows that the implementation of UPSUS SIWAB in Bali Province in 2017 and 2018 has not been optimally achieved.

In this study the targets as respondents were cattle breeders, AI officers and PKb. Cow farmers, AI officers, and PKb respondents who were made came from regencies/cities throughout the Province of Bali. Based on the results of questionnaires after the analysis can be explained as follows:

The number of respondents who participated in this study were 461 people scattered throughout the Regency in the province of Bali with proportional numbers of respondents taken from each Regency/City. From the number of questionnaires distributed, tabulation of data was carried out and obtained a general description of the respondents described below. There are 13 characteristics of respondents regarding personal data, knowledge, and interactions with officers analyzed. The discussion of each descriptive analysis is presented as follows:

Age of Respondents (N1)

Based on the distribution of the age of the respondents, it shows that out of 461 respondents, the youngest age is under 20 years and the oldest age is 90 years. The results of the questionnaire tabulation showed as many as 156 respondents aged 45-54 years were the highest number of respondents (33.8%), then followed by respondents aged 36-44 years as many as 114 people (24.5%), then respondents with age >65 years as many as 68 people (14.6%), respondents aged 15-34 years as many as 32 people (7.0%), and respondents with age <15 years as many as 1 person (0.2%).

The results of data analysis showed that the average age of the farmer who made the respondent was 50.44 ± 12.26 years. In general, respondents were in productive age according to the BPS criteria, namely ages 15-64 years were classified as productive age. As many as 392 people (85%) of respondents aged between 15-64 years are the ideal age to support activities in meeting the economic needs of households, if the age of the household head is still relatively productive (Nugroho, 2011). The success of farmers in developing livestock systems is an important asset in ensuring food security, security, and environmental preservation, conservation of natural resources, and a better quality of life (Widiyono and Sarmin, 2017).

Amount of Livestock Ownership (N2)

Based on the results of a survey of the number of cattle ownership by respondents, it was shown that livestock ownership ranged from 1-25. The number of respondents who own 25 cows is 1 respondent (0.2%), followed by respondents who have cattle ranging from 11-20 (1.0%), then the number of ownership of cattle is 10 (0, 7%), the number of ownership of cattle is 9 (0.9%), the number of ownership of cattle is 8-7 (1.1%), the number of ownership of cattle is 5-6 (5.2%), the number of ownership of cattle is 34 (14.3%) the number of ownership of cattle is as much as 1 (16.3%), and the number of ownership of cattle is 2 (39.5%).

The results of the analysis indicate that the number of ownership of 2 cows is as many as 182 people (39.5%) and is the highest number of respondents. This indicates that the business scale of respondents is still very small/low and very uneconomical. The number of livestock ownership in the low category is probably related to the limited availability of feed, because land ownership for forage planting is very limited, in addition to limited access to capital.

Respondents who owned 1-2 animals/people generally included low-scale categories. Livestock ownership has a positive relationship with the level of application of forage feed technology (Putro *et al*., 2016). One respondent had 25 cows. This shows that the business carried out is a main business with intensive maintenance and is no longer a side business.

Knowledge of the characteristics of cows with lust (N3)

The survey results showed that the level of respondents' knowledge of the characteristics of the cow was indicated that as many as 454 respondents (98.5%) stated that they knew the characteristics of cows who were in heat, whereas as many as 7 respondents (1.5%) stated that they did not know the characteristics of cows.

Based on the above data analysis shows that almost all respondents have knowledge of the characteristics of cows who are in heat. This result is different from the ability of Bali cattle farmers in Teon Nila Serua District (Maluku Province) to detect estrus. Bali cattle breeders in Teon Nila Serua Subdistrict, Central Maluku Regency, showed that observing knowledge of cattle that were in heat was good as much as 58.81% (Parera *et al*., 2011). This shows that Balinese cattle breeders in Bali have a higher level of knowledge than farmers in Central Maluku District in terms of knowing the characteristics of cows. This is probably due to the fact that farmers in Bali have good farming experience, and a relatively young age. Knowledge about lust and knowledge about the success of AI is influenced by age, formal education and non-formal education, employment, position in livestock, number of cows, experience in farming, sources of knowledge of livestock raising, and methods of raising livestock (Dilla *et al*., 2017).

Knowledge possessed by farmers can be obtained from their experience or information from various sources, either from books, media or after obtaining counseling from technical officers. Knowledge is information obtained through the observation of his mind to recognize objects or certain events that have never been seen or felt before. Knowledge possessed by humans can be obtained from beliefs, habits, senses/experiences, reason and intuition.

Knowledge can be obtained empirically and rationally by describing all the traits, traits, and symptoms that exist in these empirical objects, through repeated personal experiences of humans. The higher the farmer's knowledge about the characteristics of heat cows, the sharper the level of ability to detect cows that are being heat.

Breeders interaction with officers (N4)

Based on the results of the survey of interactions between breeders and officers, especially in relation to the request for help to officers when cows were heat it showed that as many as 332 people (72%) from 461 respondents said they always called officers if cow heat, and 129 respondents (28%) said they did not call officer if the cow has been heat.

The results of data analysis indicate that the respondent's response is quite high by always calling officers as much as 72%. This shows that breeders' attitudes and behavior are very positive towards responding when livestock need AI services. Motivation of respondents to call officers was influenced by interest and hope for the superiority of AI technology. Free funding for AI implementation, as well as preparedness of inseminator staff who are ready at all times, causes high effort for farmers to call officers. Knowledge of breeders, motivation, and IB costs incurred affected the adoption of artificial insemination technology (Syatra *et al*., 2016).

Breeders' motivation is related to behavior in the use of AI technology (Okkyla *et al.,* 2013). Motivation is a condition or condition that encourages, stimulates or moves a person to do something or an activity that is done, so that it can achieve its goals. Attitude is the readiness to react to certain environmental objects as something to appreciate the object. While behavior is an action or activity from someone from the results of responding to something from outside. Measured attitudes and behavior are usually done with the right attitude.

Knowledge of AI (N5)

Based on the survey results of the respondents' knowledge about the superiority of AI shows that as many as 261 respondents (56.6%) knew about the superiority of the AI and 200 respondents (53.4%) did not know about the superiority of the AI.

The results of data analysis showed that there were still quite a number of respondents not yet aware of the advantages of AI, so farmers could not compare the advantages of AI with natural marriage. Ignorance of farmers about the advantages of marrying AIs rather than natural mating causes farmers not to be motivated to choose to marry an AI. Besides that, the conditions in the field are still many bulls around farmers often used, regardless of the genetic quality of males as tracer. Another possibility is the lack of farmers getting information about the advantages of AI technology. Factors for adoption of AI include the level of knowledge of farmers and the motivation of farmers (Yendralisa *et al*., 2018). Strategies for increasing adoption of innovations include optimizing resources, both human capital originating from farmers and externals such as livestock owned, the environment, and the government. Provide clear and continuous information about innovation; facilitate access to information by increasing dissemination of information; provide assistance, counseling and training programs accompanied by demonstrations about innovation; increasing farmer participation; strengthen farmer institutions; seek innovation support tools together; improve the quality of extension agents, the media, and how to deliver information; and optimizing government assistance (Mulatmi *et al*., 2016).

Knowledge of pregnancy characteristics in cattle (N6)

Based on the survey of respondents' knowledge about pregnancy characteristics in cow, it turns out that from 461 respondents, it was indicated that 448 respondents (97.2%) stated that they knew the characteristics of pregnant cows and 13 respondents (2.8%) stated they did not know the characteristics of pregnant cows.

The results of data analysis showed that respondents' knowledge of the characteristics of pregnant cows was very high, due to the ease of observing physical changes in cattle in pregnant and cow conditions that were not pregnant, especially at the age of old pregnancy.

Knowledge of the need for pregnancy checks (N7)

Based on the survey results on the level of knowledge about the need for pregnancy checks on the cow after the AI shows that as many as: 296 respondents (64.2%) stated the need for pregnancy examination and 165 respondents (35.8%) stated that they did not need to examine pregnancy.

The results of data analysis showed that farmers' knowledge of the need for pregnancy examinations had not all responded positively, because there were still farmers who responded that they did not need to carry out pregnancy examinations after the AI service. Toelihere (1985) states that the success of AI can be measured by not returning to the cow's lust within 60-90 days after insemination. Pregnancy examinations are needed to diagnose pregnancy or no pregnancy. Determination of pregnancy early in cattle cattle has economic meaning, because it relates to the time of production and how to handle livestock according to the results of the diagnosis. If the results of the diagnosis indicate that pregnancy is needed care and feeding according to the nutrition needed by cow pregnant and vice versa, if the diagnosis shows that the cow is not pregnant, further treatment is needed, whether handling reproductive disorders or diafkir If no pregnancy check is done, it will potentially cause economic losses due to the delay in handling if there is a pregnancy failure. Optimization of cow reproducibility can be maximized if the target of one year calf calf can be achieved with 9 months gestation and 3 months empty period, whereas if the distance cannot be reached, it means that anestrus-postpartum or post-partumacyclic has occurred due to lust detection failure and low fertility after artificial insemination. The disadvantages caused by this non-optimal reproducibility are the relatively small number of children born (Peters, 1996).

Habits of checking pregnancy (N8)

Based on the survey results, it was shown that less than half of the respondents answered that they always had pregnancy checks. A total of 221 respondents (47.9%) said that they always checked their pregnancy, while 240 respondents (52.1%) stated that they did not always check their pregnancy.

The results of data analysis showed that the number of breeders who had behavioral attitudes who always checked their pregnancy was almost the same as the breeders who did not carry out pregnancy examinations. This is because some farmers think that the importance of conducting pregnancy checks to ensure the success or failure of pregnancy after AI services to prevent greater economic losses. Some breeders rarely carry out pregnancy checks, possibly because farmers are not economically oriented, so the delay in production time is not considered part of the loss.

Knowledge of reproductive disorders (N9)

Based on the level of knowledge of respondents about reproductive disorders as many as 162 respondents said they knew about reproductive disorders and as many as 299 respondents did not know about reproductive disorders.

The results of the analysis show that most people do not understand or do not know reproductive disorders in their cows, because most breeders do not have reproductive records and reproductive disorders, and cannot be observed from the exterior of the cow body. This is probably due to the lack of respondents getting counseling about reproductive disorders.

Addition of additional concentrated feed (N10)

The survey results on the habit of respondents giving concentrate to their cattle showed that as many as 98 respondents (21.3%) stated that they gave concentrates in addition to providing grass, and as many as 251 respondents (55.7%) stated that they did not give concentrates, and as many as 106 respondents (23%) do not want to answer. The results of data analysis showed that most farmers did not provide concentrates as additional feed on their cows. This is probably due to the fact that the price of concentrates is still relatively expensive for farmers, and farmers have not yet understood that concentrates can increase the productivity and reproducibility of cattle. Giving additional feed with concentrates on cattle gives a better influence, especially on birth weight, weight gain, and postpartum estrus (Gustiani *et al.*, 2014; Astuti *et al.*, 2015).

Land for planting forage (N11)

Based on the survey results of ownership of land planted with animal feed, it shows that as many as 195 (42.3%) respondents stated that they had land that could be planted with fodder and as many as 160 (34.7%) respondents said they did not have land planted with animal feed.

Based on data analysis shows that farmers are not entirely or less than half of the respondents own land for the supply of forage. This is in line with the very small level of livestock ownership and farmer land which limits farmers to increase the scale of their business. However, for the availability of forage in an effort to increase the growth of livestock, farmers prepare forage by buying or looking for other locations. Livestock need calories for body cell activity and growth and are obtained from nutrients contained in feed.

According to Fachroerrozi Hoesni (2015) that animal feed is very influential on the appearance of production, lack of feed will cause a lack of energy. This situation can inhibit growth, decrease body weight, and can cause reproductive disorders. Nutritional status can also be seen in the weaning body weight of a child. The mother is heavier at 90 prepartus days, then her child will be heavier after birth, where each excess of 1 kg of body weight, then the child's body weight will be higher by around 0.025 kg (Parakkasi, 1999). Furthermore, it was explained that even though the level of feeding is high for the parent fertility, over-feeding can have a negative effect, there can be difficulty in giving birth and the death of the child to the mother, especially if there is excess energy.

Calf Birth Report (N12)

The results of the study related to respondents' attempts to report their calves that had given birth showed that as many as 271 (58.8%) respondents reported the birth of calves to officers and 190 (41.2%) respondents who did not report their calf births to officers.

The results of this study indicate the desire of farmers to report the birth of their cows is relatively less. This indicates that farmers' knowledge of the importance of birth registration is not well understood, so farmers have difficulty determining the productivity of their livestock. If recording and birth reports are done properly and correctly, then this recording can be used to analyze the problems faced, and find the most appropriate solution, so that the solutions taken will directly have an impact on increasing livestock productivity and increasing population through improved management or the environment (Pari, 2018).

Knowledge of Productive Females (N13)

The results of the study on the knowledge of farmers about cutting productive female cattle stated that as many as 69 respondents stated that they sold productive female cattle and as many as 390 respondents did not sell productive cow.

Based on data analysis shows that there are still quite a number of respondents who do not understand the prohibition on the sale of productive female cattle in an effort to increase the cattle population, but sales are done more for economic reasons. In addition, breeders sell productive female cattle indirectly to slaughterhouses, so that the cattle sold are not known to be cut or maintained. If productive female cows are sold immediately cut, then this result is similar to the number of productive cattle slaughter in Malang slaughterhouse, which is about 15% (Soejosopoetro, 2011). If this happens, it will disrupt the efforts to increase the Bali cattle population. Wiguna (2015) concluded in his research conducted at 10 slaughterhouse locations in the regencies/cities throughout Bali, that the number of productive female cattle cut every year in Bali reached 80%. There are several factors that are the reasons for breeders selling productive female cattle, for example: for reasons of cattle advancing 82.2%; cows are old at: 70.0%; money requirements for school children by 61.1%; and the need for religious ceremonies as much as 40.0%; and five other reasons such as: to build a house, a sick family, pay debts, land difficulties, an old farmer with a relatively low percentage. It was further concluded that one reason was because farmers' knowledge of the importance of maintaining female cattle and early detection of production disruptions was still lacking.

The results of the analysis show that all respondents know well the optimal time to do artificial insimination to produce pregnancy. All respondents stated that they did artificial insimination at the recommended time. Knowledge of officers about the right time to do artificial insimination is a factor that determines success in increasing pregnancy rates in Bali cattle. The best time to do AI is 9-24 hours after the first lustrous signs appear (Sugiarti and Siregar, 1999). This result is different when compared to cross brahman cattle, which is the best time with a time interval of 0-4 hours having a better percentage pregnancy value (Annashru *et al*., 2017). This difference is probably caused by genetic factors from cows. The implementation of artificial insimination was carried out when the animals were in an estrous condition, because at that time the cervix was in an open position with an optimum time of 6 hours from mid-estrus to the peak of lust. Fertilization rates at the beginning of heat are 44%, mid-heat 82.5%, and at the end of lust 75%, then decrease with increasing time of heat (McDonald, 1971; Junaidi, 2000). Fachroerrozi Hoesni (2015) states that in order for a good conception to take place, it is necessary to know the right time to breed cows, the duration of lust is 6-36 hours with an average of 18 hours in adult female cows and 15 hours in virgin cows. Fachroerrozi Hoesni (2015) states that 20-30 hours after lust is a good time for artificial insimination.

The results of data analysis showed that all respondents believed that the thawing time was carried out still on the specified requirements each of the 45 respondents believed thawing time for 5-7 seconds would have a good influence on sperm motility, as many as 19 people stated optimal at 10-12 seconds and as many as 11 people stated good for more than 12 seconds. Preferably, thawing is carried out at 37 °C with optimal duration of thawing in 15 seconds. The duration of thawing affects the quality of spermatozoa stored frozen in a mini straw (Utomo and Boquifai, 2010). In some cows, such as Brahman and Simental cows, the proper duration of thawing is 15 seconds (Aprilina *et al.,* 2014; Fauzan *et al.,* 2014). Besides time, the temperature of the thawing also affects the quality of the spermatozoa. The best temperature of cow semen thawing is at 37°C, while the duration of thawing can be done between 5-30 seconds (Utomo and Boquifai, 2010). Wulandari and Prihatno (2014) stated that the difference in temperature of frozen semen thawing at 37ºC, 35ºC and 30ºC to the success of artificial insemination in beef cattle was obtained sequentially the NR (non return rate) value was: 63.16%; 55%; and 45% were statistically not significantly different (P> 0.05).

The results of data analysis showed that 50 respondents believed that deposition in the body of the uterus was in accordance with the operational standard procedure, as well as 26 respondents deposited it in the middle of the cervix. Cement deposition in the reproductive tract of female cattle is very influential on the success of pregnancy, as well as the state of cow's heat and inseminator skills in cement deposition. In Ongole cattle, deposition in the Cornua Uteri position results in a high pregnancy rate (Wijaya *et al.,* 2017). Deposition of semen on the body or uterine horn will produce good pregnancy (Susilawati, 2011). Foote (1969) explained that technically the success of Artificial Insemination depends on the ability of fertilization of spermatozoa, storage of semen before insemination, time of insemination, and proper cement deposition. Common insemination techniques are vaginal insemination, seviks, and rectovaginal techniques (Salisbury and van Demark, 1985).

Reproductive disorders are the disruption of an animal/livestock so that it is delayed or cannot even reproduce the animal. Reproductive disorders are divided into two parts, namely temporary disorders and pernanen disorders. Temporary (temporary) reproductive disorders or failures are referred to as infertile or infertile and those that are perennial (permanent) are referred to as advanced or sterile. There are 3 causes of reproductive disorders, namely livestock internal factors, other factors that are acquired (exiden) such as childbirth difficulties (distoxia), uterine prolapse, placental retention, etc., as well as management factors, such as poor management and artificial management (Toelihere, 1985).

The results of data analysis showed that there were still officers conducting Artificial Insemination on the condition of the Balinese cattle that was not good enough. As many as 8 officers stated that they made AI on body condition score (BCS = 1) and as many as 11 people who conducted AI on BCS = 2. The presence of officers who declared an AI on BCS = 1 might not understand officers assessing BCS. The body condition score is related to service per conception (Budiawan *et al.,* 2015).

Through pregnancy examination will be known reproductive status (pregnant/not pregnant) to get further treatment of the results of pregnancy examination. Pregnancy checks are very important, especially preparation for maintenance management, if livestock in pregnant positions need more special maintenance. Early pregnancy detection in cattle is very important in reproductive management as viewed from an economic perspective. Pregnancy examinations are one way to use special methods to determine the state of pregnant cows. Early pregnancy detection after artificial elimination is very important to be able to find out good reproductive performance in cattle (Pemayun, 2014).

CONCLUSION

Based on the results of the factor analysis research on the factors that influence UPSUS SIWAB's program in Bali Province, it can be concluded that breeders' factors are the main contributing factors to the failure of the SIWAB UPSUS program targets in the province of Bali and breeders' behavioral attitudes make a major contribution to the suitability of breeders' components which lead to the optimization of the SIWAB UPSUS program in Bali. Meanwhile, Artificial insemination (AI) officers and pregnancy check (PKb) officers apparently did not contribute significantly to the lack of optimization of the UPSUS SIWAB program in Bali Province.

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