

A VALUE OF BODY CONDITION SCORE (BCS), SERVICE PER CONCEPTION (S/C) AND CALVING INTERVAL (CI) ONGOLE CROSSBREDS IN DELI TUA DISTRICT

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ABSTRACT

Article Info	This study aims to determine the relationship between Body Condition Score and Service per Conception and Calving Interval of Ongole Crossbreeds in Deli Tua District. The material used was 75 Ongole Crossbreed cows. The method used is a case study, data collection is carried out primary and secondary. The variables observed were Body Condition Score (BCS), Service per Conception (S/C), Calving Interval (CI). The results showed that the average Body Condition Score (BCS) for PO cattle was 2, the S/C value was 1.9 and the Calving Interval was 14-15 months
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1. INTRODUCTION

The development of the beef cattle sub-sector in North Sumatra needs to be increased, considering that the demand for livestock products in North Sumatra generally tends to increase from year to year. This is in line with the increasing awareness of the community's nutritional needs but is not matched by an increase in the livestock population. Efforts should be made to increase the production and population of beef cattle in North Sumatra. It also aims to increase the income of beef cattle farmers (Marisa and Sitepu, 2020). In supporting the implementation of livestock development in North Sumatra, special attention needs to be given to the development of smallholder livestock, the largest part of beef cattle farming and increasing the role of cooperatives and the participation of private businesses.

One way to increase the production of meat and calves is to increase the number of beef cattle ownership and the genetic quality of livestock. This can be done by applying technology in the field of Livestock Reproduction, namely Artificial Insemination (IB) (Sitepu and Marisa, 2019). The semen used for AI comes from bulls with good genetics and the average Service Per Conception (S/C) number is small compared to natural mating.

Ongole Crossbreed cattle (PO) are one of the commodities that are included in the government's concession. One of the reasons why Ongole Crossbreed cattle has increased its role is to support efforts to improve food security both as a provider of food and nutrition and as a source of income, both of which play a role in increasing food availability and accessibility (Trantonio, 2007).

According to Hardjopranto (2005), to achieve these two programs, a method is needed to increase the productivity of beef cattle, one of which is Ongole Crossbreed cattle. The normal reproduction process will be followed by good livestock production. The higher the reproductive capacity, the higher the productivity of the livestock. In Indonesia, beef cattle breeding is still dominated by smallholder farmers using traditional maintenance patterns and technology adoption, both production technology and reproductive technology.

Most of the beef cattle among smallholder farmers in North Sumatra are only given makeshift feed with a grazing system. This impacts the Body Condition Score (BCS) of beef cattle which has a low average value. Lack of nutrients in the feed that cannot meet the needs of beef cattle results in low BCS, so the reproductive cycle is disrupted. Body size is considered to affect Service Per Conception (S/C) and Calving Interval (CI). However, there is no concrete data regarding this on beef cattle farms in North Sumatra.

Deli Tua District is one of the sub-districts in Deli Serdang Regency, North Sumatra Province. Deli Tua District has potential in terms of beef cattle development because there are many oil palm plantations. This has an impact on the availability of free feed for beef cattle and available grazing

locations, which are quite strategic if the integration of oil palm plantations with beef cattle, especially Ongole Crossbreed cattle (PO).

2. LITERATURE REVIEW

2.1 Rule

This research was conducted in Deli Tua District, Deli Serdang Regency, North Sumatra Province. This research was carried out in February 2022. Research materials and tools in this study used Ongole Crossbreed cattle in Deli Tua District, Deli Serdang Regency. The tools used during this research are writing instruments, calculators, and others.

Research Methods, The method used in this research is a descriptive method, and primary data is taken using the purposive sampling method. Secondary data was obtained from various institutions or agencies related agencies. Population and Sample Overall Ongole Crossbreed cattle (PO) in Deli Tua District Deli Serdang Regency totaling 300 PO cattle. From the total population, the sample size that represents the population is determined using the Slovin formula (Riduwan, 2005) as follows:

$$n = \frac{N}{N \cdot d^2 + 1}$$

Explanation: n : number of samples

N : population

d² : precision (set 10% with 95% confidence level)

Based on this formula, the number of samples is obtained as follows:

$$n = \frac{N}{N \cdot d^2 + 1} : n = \frac{300}{(300) \cdot 0.1^2 + 1}$$
$$n = \frac{300}{4.00}$$

n= 75 Ongole Crossbreed cattle

Data Analysis Methods This research uses simple linear regression analysis and correlation analysis with the help of the SPSS 16.0 program. Correlation analysis used the correlation coefficient formula to determine the meanness between Body Condition Score (BCS) with pregnancy mating rate and milk production (Supranto, 1986).

3. RESULTS AND DISCUSSION

3.1 Body Condition Score (BCS)

The body's energy reserves can be assessed by a visual assessment method known as the Body Condition Score (BCS). The relative score obtained from the BCS assessment helps farmers receive an overview of each cow's muscle and body fat reserves. It can be seen in Table 1.

Table 1. Research data based on the number of Body Condition Score (BCS) of Ongole crossbreeds in Deli Tua District.

BCS	Amount	Percentage(%)
1	30	40.00
2	35	46.66
3	10	13.33

source : processed data (2022)

Based on Table 1 above, the Body Condition Score (BCS) research data for Ongole Crossbreed cattle in Deli Tua District, Deli Serdang Regency, with the first highest score, is found in BCS 2 with a percentage of 46.66%. Then, the second in BCS 1 is 40.00%, while the second-highest score is in BCS 1 with a percentage of 40.00%. The lowest value is found in BCS 3, with 13.33%. The average BCS value of PO cattle in Deli Tua District, Deli Serdang Regency, is 2. The body condition score is too low if the BCS score is below 2.00. It tends to cause conditions that cause ovarian hypofunction, where the ovaries will shrink, and smooth surface (without follicles/corpus). luteum) and the uterus is

not toned with a soft consistency. Cattle with fragile body conditions have less fat reserves, resulting in low reproductive rates. Fat is an energy reserve stored in the body of livestock that comes from nutrients in feed. In young cattle, lack of energy consumption will cause delayed growth and reproduction (Santosa, 2012).

3.2 Service Per Conception (S/C)

Service Per Conception(S/C) is a number that shows the number of inseminations to produce pregnancy rates from several insemination services needed by female livestock until pregnancy occurs. It can be seen in Table 2.

Table 2. Research data based on the number of Service Per Conception (S/C) PO cattle in Deli Tua District.

S/C	Amount	Percentage (%)
1	20	26.66
2	42	56.00
3	13	17.33

source : processed data (2022)

Based on Table 2 above, it can be seen that the S/C value of Ongole Crossbreed cattle in Deli Tua District, Deli Serdang Regency with an S/C value of 26.66%, at S/C 2 with a percentage of 56.00%, and S/C 3 with a percentage of 17.33%. The results showed that the average Service Per Conception (S/C) was 1.9, meaning Ongole Crossbreed cattle in Deli Tua District require two marriages for one pregnancy. The higher the BCS value, the lower the S/C number, which indicates that the S/C will be good. The S/C value of Ongole Crossbreed cattle in Deli Tua District is good because it is more than the ideal number. According to Nuryadi and Wahjuningsih (2011) that the ideal range of S/C values is 1.6-2.0. S/C in this study was measured by marriage with Artificial Insemination (IB).

Iswoyo and Widiyaningrum (2008) said that the high number of S/C was caused by; breeders are late in detecting lust or late in reporting their cattle lust to the inseminator, abnormalities in the reproductive organs of cows, less skilled inseminators, limited insemination service facilities, and lack of smooth transportation. Generally, those affecting the reproduction of female livestock or reproductive disorders in livestock are caused by genetic factors, management (feed), and environmental factors. If livestock reproduction runs typically and good quality seeds are obtained, the income of beef cattle farmers will increase (Marisa and Sitepu, 2018).

3.3 Calving Interval (CI)

Calving Interval(CI) is the period calculated from the date a beef cattle calve until it gives birth again or the distance from one calf to the next calf. It can be seen in Table 3.

Table 3. Research data based on the number of Calving Interval (CI) PO cattle in Deli Tua District.

CI	Amount	Percentage (%)
12 to 13 months	20	26.66
14 to 15 months	45	60.00
16 > months	10	13.33

source : processed data (2020)

Based on Table 3, it can be seen that the results of the Calving Interval (CI) study for Ongole Crossbreed cattle in Deli Tua District, Deli Serdang Regency, with the first highest CI value of 45 at a distance of 14-15 months, the second with a CI percentage value of 20% at a distance of 12-13 months. And the lowest is in CI, with a percentage value of 10% at a distance of 16 months. The average weight of CL for PO cattle in Deli Tua District, Deli Serdang Regency, is 14 to 15 months. The ideal calving interval is 12 months, nine months pregnant, and three months breastfeeding. Reproductive efficiency is good if a cow can produce one calf in one year (Ball and Peters, 2004). Factors that influence the short length of CI include S/C, the accuracy of mating, and the presence or absence of pregnancy (Santosa, 2012)

The length of CI can be used as a marker to determine the presence of reproductive disorders in livestock (Rasad, 2009). CI is influenced by the length of gestation and DO (day open), so the longer the DO, the longer the CI of an animal (Reswati et al., 2014). Nuryadi and Wahjuningsih (2011) stated that feed nutrition before and after calving would affect the next estrus cycle. Sperm quality causes the failure of Artificial Insemination so that the CI becomes long (Sitepu and Zaituni, 2018). Inadequate feed consumption and nutrient intake trigger abnormalities in reproduction, thereby reducing performance

4. CONCLUSIONS

Based on the results of research conducted in Deli Tua District, Deli Serdang Regency, it can be concluded that the average Body Condition Score (BCS) for Ongole Crossbreed cattle is 2, the S/C value is 1.9, and the Calving Interval is 14 -15 months. Further research is needed to see the relationship between BCS with S/C and Calving Interval in Deli Tua District, Deli Serdang Regency to be used as material for evaluating the success of the Artificial Insemination program.

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