

CASE STUDY: Comparison of Heifer Jersey and Heifer Holstein Reproductive Parameters in Indonesia

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Abstract— Reproduction is one aspect that can show the key to the success of dairy farming. This research was conducted in Wlingi, Blitar Regency, East Java, Indonesia. The material in this study is the data recording from the DHIA (Dairy Herd Information Analysis) computer program as many as 2378 cows consisting of 1107 heifer FH (Friesian Holstein) and Heifer Jersey as many as 1271 cows. The method in this research is descriptive analysis. The parameters used in terms of reproduction are Conception Rate (CR), Pregnancy Rate (PR) and Service Per Conception (SPC). The results showed the average PR Heifer FH was 20% while the Heifer Jersey was 34%. The average CR of Heifer FH is 39% while in Heifer Jersey it is 55%. The SPC rate on Heifer FH is 2.5 while that on Heifer Jersey is 1.8. The conclusion in this study is the approach of reproduction of Heifer Jersey cows better than Heifer FH.

Keywords— Friesian Holstein, Jersey, Conception rate, Pregnancy Rate.

I. INTRODUCTION

Nation of dairy cows that are widely developed in the livestock industry in several countries are Friesian Holstein (FH) and Jersey cows. Over the past 10-15 years many cows breeding industries have begun to shift from the Friesian Hostein nation to the Jersey dairy nation. This can be seen from the nation's jersey dairy cows population has increased from 5% to 10%. Some reasons the livestock industry prefers the Jersey cow's nation as dairy cows is that with a smaller body posture than FH it is expected to be more efficient in feed and the total solid content is higher in Jersey cows than in FH cows will increase the selling price in milk (Kasbergen, 2013).

FH is a type of dairy cow with the highest milk production compared to other types of dairy cows and Jersey cow is a type of dairy cow with the highest fat content making it suitable for use in the cheese-type milk processing industry. According to Kasbergen (2013), states that the most popular dairy cow nation in the United States is from the FH and Jersey. Many FH cows are farmed because milk production is quite a lot compared to other types of dairy cows, while Jersey cows are developed more because they are more efficient in the cheese processing industry because the fat content of Jersey cows is higher than FH cows.

One key to the success of a dairy farming business is efficiency in terms of reproduction. The parameters used in terms of reproduction are Conception Rate (CR), Pregnancy Rate (PR), Service Per Conception (SPC) and Calving Interval (CI). In a study of 23,000 Holstein Friesian cows, the average reproductive appearance of the first lactation was 28.5%,

second lactation was CR 29.17%, third lactation was CR 28.83%, fourth lactation was 27% and fifth lactation was 25 , 83%. (Norman et al, 2009) in the same study the average reproductive performance of jersey cows in the first lactation was CR 37.5%, second lactation was CR 35.16%, third lactation was CR 32.83%, fourth lactation was CR 29, 5% and the fifth Lactation CR 27.17%. The overall reproductive appearance of Jersey cows is higher than that of Holstein Friesian cows.

The purpose of this study was to compare the reproductive status of Friesian Holstein heifers and Jersey heifers in the tropical countries of Indonesia.

II. MATERIAL AND METHOD

A. Location Research

This research was conducted at a dairy farming company located in Wlingi, Blitar, East Java, Indonesia. This research data was taken for 3 months, namely during October-December 2018.

B. Material

The material in this study is the recording of Friesian Holstein heifer ready for IB as many as 1107 heads imported directly from Australia in 2017 and the recording data for Heifer Jersey ready for IB imported directly from Australia as many as 1271 heads.

C. Parameter

The variables observed in this study are:

1. Pregnancy Rate (PR)

PR is the percentage of cows declared pregnant divided by cows that should be inseminated over a 21 day period. (Malik et al., 2012)

2. Conception Rate (CR)

CR is the percentage between the number of cows pregnant at the first IB or mating (Susilawati et al., 2016)

3. Service Per Conception (SPC)

Service Perconception (SPC) is the number of marriages that produce pregnancy in the first pregnancy check (Cielava et al., 2017), whereas according to Susilawati et al., (2016) is a number that shows the number of animals mated to produce pregnancy.

D. Research Methods

The method in this study is a descriptive analysis of Heifer FH and Jersey data recording obtained from the DHIA (Dairy Herd Information Analysis) computer program recording.

III. RESULT

Reproduction is one aspect that can show the key to the success of dairy farming. The Heifer Jersey was first mated at the age of 12 months while the FH heifer was first mated at the age of 14 months (Kasbergen, 2013). Maintenance management in this study is that cows are kept in close house cages so that environmental conditions in the rearing area are more stable.

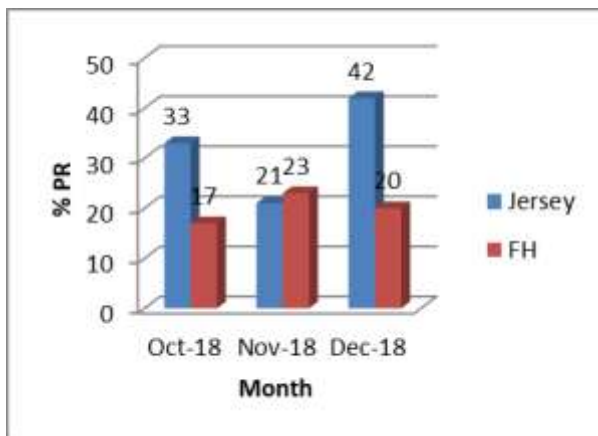


Fig. 1. Percentage Pregnancy Rate of Heifer Fiesian Holstein and Jersey

In Figure 1, the average PR of the Jersey heifer between October-December 2018 is better than the FH heifer PR of 34% and 20%, the highest PR in the Jersey heifer occurs in December 2018 which is 42% and the lowest in November 2018 is 21 %. In PR Heifer FH the highest in November 2018 is 23% and the lowest in October 2018 is 17%. According to De Vries et al., (2005) said that in the California Polytechnic in the United States the PR Jersey Heifer was higher than the PR Heifer FH, namely 27% and 17%.

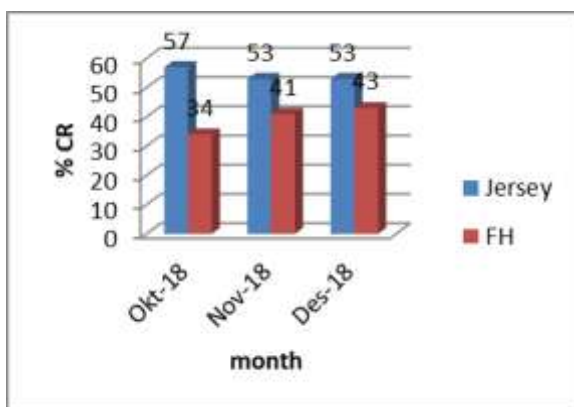


Fig. 2. Percentage Conception Rate of Heifer Jersey and Friesian Holstein

The results of CR between Heifer Jersey and FH heifer are better Jersey heifers, with Heifer Jersey average of 55% and

FH 39%. Percentage of PR on Jersey heifers in October 2018 with CR 57% and on Heifer FH in December 2018 with CR 43%. This is inversely proportional to Kasbergen's research (2013) which says that the Jersey CR heifer is lower than the CR heifer FH, with the average for the Jersey heifer 56% while the FH heifer 60%. Based on Norman et al., (2009) the CR for the Heifer Jersey is 37.5% and the CR for the Heifer FH is 28.5%. With good management, the CR number can be maximized from the results of research for heifer jersey CR 59.6% and CR in heifer FH 49.5% (Washburn et al., 2002).

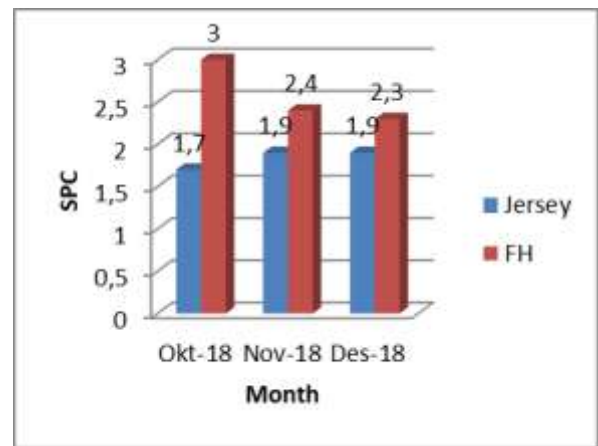


Fig. 3. Service Perconception Heifer Jersey and Friesian Holstein

In Figure 3, the Jersey Heifer Service Perconception (SPC) is better than the FH with an average SPC heifer Jersey 1.8 and SPC FH 2.5. The SPC on the Heifer Jersey during observations between October-December 2018 is still below 2 while the SPC on the Heifer FH is highest in October 2018 with the SPC number 3. According to Norman et al., (2009) the average SPC increased from 1996, namely SPC for FH 2.1 and jersey 2.0 and in 2006 SPC on heifer FH 2.5 and on heifer jersey 2.3.

The appearance of the reproduction of jersey cows is better than that of FH cows because the posture of jersey cows is smaller than that of FH cows so that the reproductive appearance of the jersey heifer is more efficient compared to Heifer FH. This is in accordance with Muller et al., (2014), said that the appearance of reproduction of jersey cows is better than that of Friesian Holstein cows

IV. CONCLUSION

The conclusion in this study is the appearance of reproduction in jersey cows is better than FH cows. PR Heifer jersey is 34% whereas in heifer FH is 20%. CR on heifer jersey 55% while on heifer FH 39%. The SPC rate on the jersey heifer is better or lower than the FH heifer which is 1.8 and 2.5 on the heifer FH.

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