ABSTRACT

AFTON ATABANY. Reproduction and Milk Production Efficiencies of Holstein Friesian Cattle from Parent Generation to Offspring Generations. Supervisors of BAGUS P. PURWANTO, TOTO TOHARMAT and ANNEKE ANGGRAENI.

Milk production in Holstein Friesian (HF) dairy cows can be improved by increasing reproduction and milk production efficiency. Reproduction and milk production performances of HF cows for Parent Generation and its descendants have still been studied less in Indonesia. Study was aimed on reproduction and milk production efficiencies in HF cows from Parent Generation (P0) to its F1, F2, and F3 generations conducted at Baturraden Dairy Cattle BBPTU, Baturraden Subdistrict, Purwokerto Regency, Central Java. Data of productivity of Holstein Friesian cows were used from the periods of 1985 to 2003. The data were from a total number of HF cows of 1598 hds, coming from P0 cows for 651 hds, and the generations of F1 for 599 hds, F2 for 280 hds and F3 for 68 hds. Generation from P0 through F3 resulted in increasing in birth weight and weaning weight; whilst lengthening in the ages of first mating and first calving as well as number of services per conception (S/C).

Interval of first mating after calving for F2 compared to P0 was shorter (P < 0.01). This first mating after calving interval correlated negatively with observed generations. P0 had a significantly linear regression model (P<0.05) with log Y = 1981-0.1070 log X. F3 had very significant (P<0.01) in linear regression and significant (P<0.05) in both quadratic and cubic model, with log Y = 2.276 to 0.6778 log X. By progressing generations, from P0 through F3, increased days open (DO). For F3 generation, DO and lactation period had a significantly negative correlation (P<0.05) with r = -0.325. For F3 generation, by lengthened lactation period linearly reduced DO with log Y = 2.487-0.6874 log X. Days of pregnancy decreased significantly (P<0.01) from P0 to F2 generation, but it was difference among F2 to F1 and F3 generations.

Lactation length and total milk production decreased by progressing generations from P0 until F3 generation. Total milk production and daily milk production reached the highest in the third lactation period. Dry period and calving interval increases from P0 through F3 generation. Lactation curve showed that peak of daily milk was reached at 8 weeks of lactation. P0 had the lowest persistence, while F2 had the highest one. Persistency by lactation periods increased up to the third lactation. HF cows by generations (P0 to F3 generation) resulted in increasing reproductive performances of the age at first mating and calving, first mating after calving interval, DO, and S/C. In general HF cows showed a decreasing productivity by progressing generations.

Key words: Holstein Friesian, different generation, efficiency, reproduction and milk production.