The Influence of Dairy Farming Motivation on Dairy Cows Productivity in Different Disaster Prone Areas of Merapi Volcano

S. Andarwati[1], F. Trisakti Haryadi[2], B. Guntoro[3], E. Sulastri[4]

[1234]Faculty of Animal Science, Gadjah Mada University
Corresponding email: standarwat@gmail.com; andar_siti@ugm.ac.id

ABSTRACT: This study aimed to analyze: 1) Dairy farmers motivation in disaster-prone areas (DPA) II and DPA III of Merapi volcano, and 2) The influence of dairy farmers motivation on dairy cows productivity. The research was conducted using household survey with interviews involving respondents were selected. The location determined by purposive sampling study, which was located in DPA II and DPA III of Merapi volcano. Samples or materials research was determined by Purposive Sampling method. Dairy farmers in disaster-prone areas chosen with the following criteria: 1) maintain dairy cows at least one year, and 2) as the member of farmer group's cage. The respondent took by using the Census for farmers who have the criteria. Assessment of dairy farming motivation was based on criteria according to the Likert scale. In order to determine the influence of dairy farming motivation on the productivity of dairy cows made by Regression. The average value of dairy farming motivation was high for both areas of research in DPA III of 110.19 while in DPA II amounted to 106.05. Farmer motivation in the DPA III was higher if compared with the farmer in DPA II. There were very little influence of dairy farming motivation on the productivity of dairy cows, even in terms of milk production (0.07), services per conception (0.05) and calving interval (0.002).

Keywords: Motivation, Dairy farming, Productivity of dairy cows, Merapi disaster-prone areas

INTRODUCTION

Dairy farm is one of the main businesses in the livestock sub-sector which has a prospective opportunities. The development of the dairy farm providing a positive impact on job creation in rural and promising cash income, so it can motivate farmers to take an active role in agribusiness activities in order to improve the income and quality of family nutrition. Dairy farm in Yogyakarta is mostly done on the slopes of Merapi. Merapi slope according to BNPB (2010) is divided into three disaster-prone areas (DPA), namely DPA I, DPA II and DPA III. DPA III is the area that closest from the peak of Merapi volcano. Most of the dairy farm on the slopes of Merapi, which is located in the Sleman regency cultivated by small farmers.

Dairy farmer income generated from the sales of milk production and calfs. To get a high milk production and calf every year, it's necessary to have a high quality of dairy cows and good management. Good management in livestock is one of the key of the productivity to be optimal. Farmers in maintaining dairy cows in their daily life may possible because of the motivation from themselves. The importance of the farmers motivation in raising dairy farm needs to be studied more in depth, and analyzed the effect of farmers motivation to the productivity of dairy cattle that reflected not only milk production but also on reproductive performance in the form of services per conception (S/C) and calving interval (CI). Dairy cow productivity greatly impact to the economic income of the farmer. This study was inspired by Nasrudin research (2011) which states that there is a relationship between farmers motivation with income of farmers.

MATERIALS AND METHODS

The research was conducted using household survey with interviews involving respondents were selected. The location determined by purposive sampling study, which was located in DPA II and DPA III of Merapi volcano. Samples or materials research was determined by Purposive Sampling method. Dairy farmers in disaster-prone areas chosen with the following criteria: 1) maintain dairy cows at least one year, and 2) as the member of farmer group's cage. The respondent took by using the Census to farmers who have the criteria. Overall the number of respondents are 60 farmers, consisting of 40 farmers from DPA III and 20 farmers from DPA II. Assessment of dairy farming motivation was based on criteria according to the Likert scale. In order to determine the influence of dairy farming motivation on the productivity of dairy cows made by Regression.

RESULTS AND DISCUSSION

The average value of a dairy farmers motivation in DPA III amounted to 110.19 while in DPA II amounted to 106.05. Motivation of dairy farmers in DPA III is higher than the motivation of farmers in DPA II. This is because of farmers in the DPA III more experienced (8.73 years) if compared with farmers in the DPA II (2.95 years). Farmer's active participation in the group can increase their knowledge and motivation in this business. This is due, farmers can exchange information with others and receive information from extension workers, and they also get support/ease of access to services in infrastructure and in product sales.

Dairy cows productivity can be observed in three important aspects, including milk production, service per conception (S/C) and calving interval (CI) (Table 1). Milk production and the value of the S/C in DPA III is better than DPA II, however, the value of CI in DPA III longer if compared with CI in DPA II.

Table 1. The productivity of dairy cows

Indicator	Region	
	DPA III	DPA II
The average milk production per dairy cows (liters / day)	10.25	11.43
Services per conception (frequency)	1.89	1.92
Calving interval (months)	12.48	11.47

Source: Primary data analyzed (2014)

The average value of milk production at both sites is higher than the average productivity of milk in Sleman regency before the Merapi eruption of 2010 according to Assesment Institute of Agricultural Technology (2012); 10 liters/head/day and after the eruption of 9.15 liters/head/day. The value of the milk production according to Ilham & Priyanti (2011) in the members of the cooperative on the slopes of Merapi, which is between 9-15 liters/head/day. The value of services per conception at both sites of study, included in the normal category. According Toelihere (1993) in the Indonesia Directorate General of Livestock and Animal Health, Directorate of Livestock Breeding (2012), the ranges value of the S/C normally between 1.6- 2.0. Thus, according Vandeplassche (1982), the low value of the S/C is very important in the economic sense, both in natural insemination or artificial insemination (IB). The value of S/C exceeding 2.0 is considered unfavorable because it demonstrates reproduction inefficient and would be detrimental economically. Value of calving interval is better than the research Pramono *et al.,* (2008) in 62

groups of farmers who are members of three dairy cooperatives that are UPP Kaliurang, Sarono Makmur and Warga Mulya in Yogyakarta that shows the value of CI average 434.77 ± 59.20 days. Calving Interval value of dairy cows in DPA II approached the optimum for CI cows according Vandeplassche (1982), i.e 12 months.

The amount of influence of the dairy farmers motivation to the milk production can be observed in Table 2. The correlation coefficient (R) of 0.264 and R Square of 0.07. The value of the effect of motivation on milk production is very small, which is only 0.07.

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.264a	0.70	0.053	3.44991

a. Predictors: (Constant), motivation

The amount of influence of dairy farmers' motivation to services per conception can be observed in Table 3. The value of correlation coefficient (R) of 0.223 and R Square of 0.05. The value of the effect of motivation on the S/C is very small, which is only 0.05.

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.223a	0.050	0.033	1.16840

a. Predictors: (Constant), motivation

The amount of influence of dairy farmers motivation to calving interval can be observed in Table 4. The correlation coefficient (R) of 0.041 and R Square of 0.002. The value of the effect of motivation on calving interval is very small, which is only 0.002.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.041a	0.002	-0.016	5.23548

a. Predictors: (Constant), motivation

Results of the three regression analysis proved that the influence of dairy farmers motivation to dairy cow productivity is very small, include in terms of aspects of milk production, services per conception and calving interval. The productivity of dairy cow is influenced by factors of the livestock management, especially the availability of feed and balanced according to the needs of livestock, the quality of the parent, the quality of semen and artificial insemination experts.

Management of the dairy farm is the actualization of farmer's attitudes toward business. Attitude according to conception "Tripartite model" of Rosenberg and Hovland (1960 in Ajzen, 1988), expressed as a construct cognitive responses (response of perceptual and statement that they believed), the response affection (response of neural sympathetic and statement of affection) and response behavior (response of regarding actions and statements regarding the behavior). Dairy farm business by the farmers does not involve cognitive and affective, including motivation. Behavioral aspects (maintenance) which is a habit, livestock and equipment of livestock production

greater influence on the productivity of dairy cow.

IMPLICATIONS

The average value of dairy farming motivation was high for both areas of research in DPA III of 110.19 while in DPA II amounted to 106.05. Farmer's motivation in the DPA III was higher than in DPA II. There were very little influence of dairy farming motivation on the productivity of dairy cows, even in terms of aspects of milk production (0.07), services per conception (0.05) and calving interval (0.002).

REFERENCES

Ajzen, I., Attitudes, Personality, and Behavior, Milton Keynes: Open University Press, 1988.

Balai Pengkajian Teknologi Pertanian Yogyakarta, 2012. *Produksi Susu Sapi Perah Pada Kelembagaan Koperasi Di Kabupaten Sleman Pasca Erupsi Gunung Merapi 2010*. BPTP Yogyakarta. Yogyakarta.

BNPB. 2010. Merapi Disaster Prone Area; Disaster Management Agency. BNPB, Yogyakarta.

Direktorat Jenderal Peternakan Dan Kesehatan Hewan, Direktorat Budidaya Ternak. 2012. *Pedoman Optimalisasi Inseminasi Buatan (IB) tahun 2012*. Jakarta.

Ilham, N., Priyanti, A., 2011. *Dampak Bencana Merapi Terhadap Usaha Sapi Perah di Kabupaten Sleman*. WARTAZOA. Buletin Ilmu Peternakan dan Kesehatan Hewan Indonesia Vol. 21 No. 4 Th 2011, 161-170.

Nasrudin, 2011. *Hubungan Etos Kerja, Motivasi dan Sikap Inovatif Peternak Kerbau Di Kabupaten Manggarai Barat*. Tesis Sekolah Pascasarjana, Fakultas Peternakan, Universitas Gadjah Mada, Yogyakarta.

Pramono, A., Kustono, H.Hartadi. 2008. *Calving Interval Sapi Perah Di Daerah Istimewa Yogyakarta Ditinjau Dari Kinerja Reproduksi*. Buletin Peternakan Vo. 32(1): 38-50. Yogyakarta.

Vanderplassche, M. 1982. Reproductive Efficiency in Cattle. FAO Animal Production and Health Paper No 25. Rome. Italy.