The Effect of Work on Reproductive Performance of Bali Cattle Under the Oil Palm Plantation in Bengkulu

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ABSTRACT

The integration of cattle rearing under the oil palm plantation would beneficially support both livestock and plantation sector. Farmer would benefit the integration of livestock-oil palm plantation through its better income, optimum land use, labor efficiency, and better environment. In Bengkulu, the use of Bali cattle as Draught Animal Power (DAP) for carrying fresh fruit bunch (FFB) has proven to benefit both to the plant and livestock. The objective of this study was to determine the effect of work on reproductive performance in Bali cow. A total of 40 Bali cows within the range of body condition scored (BCS) 6-7 are divided into two groups, namely *Working* animals and *No-Working*. The *Working* group was subjected to three kinds of day-to-day work; these were *Work-1* (pulling cart from home to oil plantation), *Work-2* (pulling cart with FFB from plantation to collection site) and *Work-3* (pulling cart from plantation to home). Parameters measured were working regime (distance, speed, duration, and load) and reproductive performance (S/C, length of gestation, days open, birth weight and calving interval). Results showed that the average of distance, speed and load of *Work-1* and *Work-3* were significantly lower ($P<0.05$) than those of *Work-2*. For the respective *Work-1*, *Work-2* and *Work-3,* it was known that the distance measured were 1.287, 0.407, and 1.287 km; the load were 138.75, 582.5 and 89.09 kg; and the speed were 2.082, 0.856, and 2.055 km/hr respectively. Result also showed that there was no significant difference on reproductive performance between *Working* and *No-Working* animals, as presented by S/C (1.50 vs. 1.41), gestation length (284.2 vs. 281.6 d), days open (82.5 vs. 80.53 d), calf birth weight (14.6 vs. 16.25 kg), and calving interval (375.9 vs. 370.9 d). In conclusion, there was no working effect on reproductive performance for Bali cows.

Key words: Bali cattle, working, oil palm plantation, integration, reproductive performance

INTRODUCTION

Population and production of cattle in Indonesia has decreased in the last two decades, the major constraint to increased livestock production is the difficulty in providing feed of sufficient quantity and with adequate nutrient composition throughout the year .and decreasing land for livestock production mainly due to increasing land used for plantation such as oil palm, rubber, etc. There is considerable chance to optimizing land use through integration between crops and livestock, palm oil plantation have a huge potential to increase livestock population through the use of its by products for feed.

The inter row areas of these crop are usually covered with vegetation comprising legume, grasses, broadleaf species and fern which usually considered as weeds that can be utilized as source of for ruminant feed (Dwatmadji, 2005; Wahab, 2002). According to Jalaludin (1996) the cost of weeding control is quite significant and can be easily eliminated if the vegetation in the inter-rows is utilized for animal nutrition. Integrating animals in the plantation can also reduce fertilizer application since the nutrients returned to the soil from the animals are quite substantial. Reducing chemical fertilizers in the long-run will not only reduce production costs but, more importantly, will also minimize further deterioration in soil fertility.

In Bengkulu, the importance of cattle and oil palm integration can play an important role for weeding control, providing manure compost, producing calves, as life-saving, and for draft purposes. As a draft animal in oil palm system, Bali cattle can be used for transporting Fresh Fruit Bunch (FFB) from the harvesting area to collection site (main road). It is generally accepted that working animal requirement for