The Effect of Concentrate Supplementation Made From Palm Oil Sludge and Several Local Feed Resources to Production Performance of Bali Calves

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ABSTRACT

This experiment was aimed to investigate the production performance of Bali calves male supplemented by concentrate diet made from palm oil sludge (solid decanter) and several local feed resources (rice bran, cassava flour, cassava leaf flour, and blood meal). This experiment was arranged in Latin Square Design with 4 treatments and 4 replications. Four weaned Bali calves ± 9 months old were used. The treatment was the ratio of concentrate and forage ration in the diet consisted of P1=80% concentrate (C) : 20% Forage (F), P2= 60%C:40%F, P3 = 40%C: 60%F, P4= 20%C: 80%F. Data were analyzed by using analysis of variance (ANOVA) and any significant differences were further tested with Duncan Multiple Range Test. The result showed that the treatment had no a significant effect on average daily gain, crude protein consumption and feed conversion value, but significantly decreased dry matter consumption. The results indicated that concentrate diet made from palm oil sludge and local feed resources had positive effect on Bali calves performance ranged about 0.167kg/day-0.271kg/day respectively.

Key words: palm oil sludge, concentrate diet, production performance, Bali calves

INTRODUCTION

Good production performance of livestock can be reached by supplying good quality and quantity of feed. The problem is the availability of forage that is difficult to get it and the concentrates price now is getting expensive. Because of that it is urgent to create the innovation by using local feed resources which are much available, cheap, good nutritive values, safety and not compete with human needs. One of this is palm oil sludge (POS) or solid decanter.

Palm oil sludge (POS) is one of by product resulted from the first stage of palm fresh fruit processing by mechanical pressure to get palm oil. POS is produced 2% from crude palm oil produced (Devendra, 1977). Until now POS has not been used yet by the factory, but it is still a waste that can pollute the environment.

POS can function as feed ingredient mixture. In dry matter base, it contains crude protein 13% that is close to crude protein of rice bran 13.3%. Its TDN value is 74% higher than rice bran which has 70% (Agustin, 1991). The use of POS as feed significantly enhanced the weight gain of male Ongole cattle which was applied POS 1.5% dry matter from live weight *adlib* as long as three months got average daily gain 440 and 770 gram/head/day, while for control (without solid) got 200 gram/head/day (Utomo and Widjaja, 2004).

Gohl (1981) and Aritonang (1986) said that without any treatment, LMS can be applied in ruminant diet up to 50% from total concentrate. Hidayat *et al.* (2002) reported that fresh POS (without treatment) can be used for feed ingredient up to as much as 24.96% from total diet or about 49.82% from total concentrate.

The main constraint in POS utilization is that POS is too easy to become decay (rancid flavor) so it needs special handling for long lasting endurance in storage processing. The way to preserve POS is by pelleting or blocking it. Through this way, POS have long lasting preparation, have more complete nutrient value because several other ingredients can be added. POS has a character to become harden after drying so it can be used as glue in pelleting or blocking process. Several advantages from feed pellet form are it is easy to handling the feed, efficient enough because it did not need much space. The feed does not produce many wastes, dusty and very suitable with feedlot system. The pellet form made weight per volume of feed enhanced 7-8 times before ground so it can enhance the nutrient density and decreased the