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Effect of Soybean in Milk Replacers on Veal Calf Performance

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Abstract

In Thailand, feeding of veal calves with milk is expensive. The cost of production can be reduced by using milk replacers. A low cost and high quality plant protein milk replacer could be produced from soy bean which is readily available in Thailand. The objective of this study was to compare the performance of veal calves produced with three different milk replacers. 18 Holstein Friesian Crossbred (75%) calves with an initial average weight gain of 30 kg were under a completely randomised design (CRD) allocated to 4 groups. Group 1 (control) received whole milk, group 2 milk replacer based on milk protein, and group 3 and 4 milk replacers with 5 and 10% soybean protein respectively. The calves were fed 10% of body weight (2 times a day). Weight was recorded every 2 weeks until 120 days of age.

There were no significant differences ($p > 0.05$) among groups 1, 2, 3 and 4 in average total feed intake (789.1, 727.4, 649.5 and 636.4 kg, respectively) and feed cost per kg weight gain (111.5, 117.8, 148.2 and 97.3 bath/kg weight gains, respectively). The groups reached final weight gains of 70.3, 45.4, 31.5 and 33.7 kg respectively. Weight gain of group 1 tended to be higher ($p > 0.05$) than of group 2 and was higher ($p < 0.05$) than for group 3 and 4. Average daily gain (0.586, 0.388, 0.243 and 0.294 g/day), feed conversion ratio (11.94, 15.86, 17.04 and 17.98) and feed efficiency (8.76, 6.31, 5.87 and 5.60) of groups 1, 2, 3 and 4 were significantly different. Group 1 was better than the other three groups ($p < 0.05$).

It was concluded that veal production with fresh milk gave better production performance than with milk replacer in terms of weight gain, ADG, FCR and FE. But feed cost per kg weight gain was not different.

Keywords: Milk replacers, soybean protein, veal calves