

ENERGY AND PROTEIN EVALUATION OF FIVE FEEDSTUFFS USED IN DIET IN WHICH CASSAVA PULP AS MAIN ENERGY SOURCE FOR LACTATING DAIRY COWS

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Abstract

Energy values of five feedstuffs commonly used in the concentrates were evaluated. The energy values, net energy for lactation at production level ($NE_{L,p}$), were 1.48 ± 0.01 , 1.44 ± 0.01 , 1.65 ± 0.01 , 1.85 ± 0.01 and 2.00 ± 0.01 for cassava chip, cassava pulp, rice bran, ground corn and soybean meal, respectively. The experiment was then conducted to investigate the effect of cassava pulp addition in the concentrate on the performance of lactating dairy cows. Twenty four Holstein Friesian crossbred (>87.5% Holstein Friesian) lactating dairy cows in mid lactation; averaging 13.2 ± 2.1 kg of milk, 114 ± 42 days in milk, 48.2 ± 7.0 months old and 437 ± 55 kg live weight, were stratified for milk yield, days in milk, age, stage of lactation and body weight, and then randomly allocated to three treatment groups. The first, second and third groups were fed concentrates containing the respective cassava pulp, 35%, 40%, and 45%. All cows were fed *ad libitum* grass silage and given free access to clean water. Dry matter intake (15.3 vs 15.8 kg/d), milk yield (14.2 vs 14.1 kg/d), milk composition and body weight change were unaffected ($P>0.05$) by the treatments. The present study indicated that 45% cassava pulp can be used in the concentrate for lactating dairy cows.

Keywords: Cassava pulp, energy evaluation, milk production, dairy cattle

Introduction

In Thailand, more than 60% of the cost of milk production is the cost of feeds, particularly concentrates. Increases in the cost of feeds inevitably cause increases in the cost of milk production. In addition, the increase in demand for renewable energy has affected the price of livestock feeds such as cassava chip and molasses since they are the major raw materials for ethanol production. Both feedstuffs have

risen in price to the point where there is interest in reducing the level consumed by the animals. There are many attempts to reduce cost of feeds through the utilization of cheap raw materials, such as agro-industrial by-products. Although cassava pulp, the residue obtained after the extraction of starch from cassava roots, is low in crude protein (CP), it is present in a considerable amount. Sriroth (2006) reported

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