

Taro (*Colocasia esculenta*) leaves as the protein supplement

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Intake, digestibility and N retention by growing pigs fed ensiled or dried Taro (*Colocasia esculenta*) leaves as the protein supplement in basal diets of rice bran/broken rice or rice bran/cassava root meal

Abstract

The experiment was conducted in the Center for Livestock and Agriculture Development (CelAgrid) in Cambodia. Four crossbred castrated male pigs, weighing on average 20 kg, were allotted at random to 4 diets, in a 2*2 factorial within a 4*4 Latin square, to study the effect of ensiled and sun-dried Taro leaves on intake, digestibility and N retention. The basal diets were rice bran + broken rice or rice bran + cassava root meal (1:1 ratio). The basal diets were offered at 2% of live weight (DM basis) and the dried or ensiled leaves ad libitum.

Almost twice the quantity as DM was consumed as leaves when these were dried compared with the ensiled form. The taro leaves provided from 38 (ensiled) to 43% (sun-dried) of the dietary DM and from 75 (ensiled) to 82% (sun-dried) of the dietary protein. Apparent digestibility of DM and OM tended to be higher for the diets with dried versus ensiled Taro leaves. Coefficients for crude protein were lower, and for crude fiber, were higher for dried versus ensiled leaves. There were significant effects of N intake on urine N, faecal N and N retention. After adjusting these variables by covariance for N intake, there were significant effects of processing the Taro leaves on urine N (decreased in dried leaves) and faecal N (increased in dried leaves) but not on N retention. N retained as percentage of N intake was not affected by processing of the Taro leaves or by energy source. N retained as percentage of N digested was higher for dried versus ensiled Taro leaves and was not affected by differences in N intake.

The apparently higher nutritive value of sun-dried compared with ensiled Taro leaves may have been caused by inadequacies in the ensiling process, resulting in excessive breakdown of the protein and poor palatability. The relatively high values of N retention (equivalent to about 250 g/day of live weight gain) and of retained N as a proportion of digested N in the diet with sun-dried Taro leaves, are indicative of a high biological value of the Taro leaf protein, especially as it represented over 80% of the dietary crude protein in these diets.

Key words:

Colocasia esculenta, digestibility, ensiling, leaves, N balance, pigs, sun-drying, taro

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