

# Effects of diets supplemented with rumen by pass amino acids and different crude protein levels on antlers production, blood biochemical indices and economic benefits in Formosan sambar deers <sup>(1)</sup>

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## Abstract

The study was conducted to investigate the effect of feeding total mixed ration (TMR) supplemented with 0.1% and 0.2% rumen by pass amino acid or different percentage of crude protein (CP) on antlers production, blood biochemical indices and economic benefits in Formosan sambar deer. Four different diets were formulated into iso-metabolizable energy diets (ME = 2,400 kcal/kg). A total of 16 Formosan sambar deers were randomly assigned to 4 groups which received diets (n = 4): CP-adequate (13%), CP-adequate (13%) diets with 0.1% rumen by pass lysine, CP-adequate (13%) diets with 0.2% rumen by pass lysine, and CP-adequate (15%) of TMR. During antler development stage, diets were provided ad libitum. The result showed that there were no difference on average dry matter intake, antlers production among the groups. Nevertheless, the CP 15% and 13% (with 0.2% rumen by pass lysine) groups increased 9.26% and 8.02% antlers production than CP 13% group. There were significantly ( $P < 0.05$ ) higher chemical and amino acid composition of velvet antler (including dry matter, threonine, histidine, glutamic acid, aspartic acid and total amino acid concentrations for the group with 0.2% rumen by pass lysine level in diet, On the other hand, significantly ( $P < 0.05$ ) lower on the ALT (Alanine Amino transferase) and AST (Aspartate Aminotransferase) in blood were observed. There were significantly ( $P < 0.05$ ) lower on the ALT and AST indices when the CP level in diet was increased, but the calcium concentration was significantly ( $P < 0.05$ ) higher. The results indicated that deer fed the diet with CP 15% or CP 13% supplemented with by pass lysine had higher velvet production than feeding diet with CP 13%.

Key words: Antler production, Blood biochemical indices, Economic benefits, Formosan sambar deer, Rumen by-pass Lysine.

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