Evaluation of ten tropical legume forages for their potential as pig feed supplement

Evaluation of ten tropical legume forages for their potential as pig feed supplement

CIAT and Hohenheim University tested 10 alternative forages for their nutritional value and *in-vitro* digestibility for pigs in order to predict their potential as alternative protein supplement in a tropical smallholder context.

Herbage of *Cratylia argentea* , *Desmodium velutinum* , * Fleminigia macrophylla,*   *Leucaena diversifolia,*   *Canavalia brasiliensis* , *Centrosema brasilianum* , *Clitoria ternatea* , * Lablab purpureus* , *Stylosanthes guianensis* and *Vigna unguiculata* from the CIAT (International Center for Tropical Agriculture) gene bank were assessed for their nutritional value and *in-vitro* digestibility for pigs in order to predict their potential as alternative protein supplement in a tropical smallholder context.

Crude protein (CP) contents ranged from 137 to 257 g kg -1 dry matter (DM) (mean 191 g kg -1 DM), although a considerable proportion of it, 27 % on average, was bound to neutral detergent fiber (NDF). Interesting levels of lysine were found in * Cratylia argentea* (14 g kg -1 DM) and *Leucaena diversifolia* (13 g kg

-1
 DM), whereby the latter was also high in tannic acid concentration (49 g kg

-1
 DM) thus limiting the amino acid digestibility.
Vigna unguiculata
 presented highest
* in-vitro*
 enzymatic degradability (521 g kg

-1
 DM), which even increased in a 40:60 mixture with maize. Lowest degradation was obtained with
* Flemingia macrophylla*
 (248 g kg

-1
 DM), while the median of the forages approached 390 g kg

-1
 DM. It is concluded, that
Vigna unguiculata
 herbage meal has the highest potential to be successfully included in pig diets, while
Cratylia argentea
 meal should equally be assessed
in vivo
.

Keywords:
 amino acids, fiber, in-vitro digestibility, tannins

S N Heinritz, S Hoedtke*, S D Martens, M Peters and A Zeyner***

Center for International Tropical Agriculture (CIAT), Multipurpose Tropical Forages, Cali, Colombia

 * University of Rostock, Faculty for Agricultural and Environmental Sciences, Chair for Nutrition Physiology and Animal Nutrition, Rostock, Germany

 ** University of Hohenheim, Landesanstalt für Landwirtschaftliche Chemie, Stuttgart, Germany

with the courtesy of Livestock Research for Rural Development

Sí