Session VII - Feed Ingredients and Feed Processing

APPARENT DIGESTIBILITY OF NUTRIENTS OF SELECTED FEED INGREDIENTS IN PRACTICAL DIETS BY COBIA Rachycentron Canadum

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Apparent digestibility coefficients of dry matter (DM), crude protein (CP), crude lipid (CL), gross energy (GE), phosphorus, and essential and non-essential amino acids in Chilean fish meal, poultry by product meal, meat and bone meal, blood meal, corn gluten meal, defatted soybean meal/roasted and refinazil were determined for juvenile cobia. A reference diet (RF) and test diets (consisting of 70% RF diet and 30% of the feedstuff) were used with 0.5% Cr_2O_3 as an external indicator. The juvenile cobia, averaging 14 g, were stocked in 200-L cylindrical-conical bottomed aquariums at the density of 10 fishes per tank. Feces were collected from triplicate groups using a fecal collection column attached to the botton of the fish rearing aquariums. Apparent digestibility coefficients of dry matter, crude protein, crude lipid, and gross energy were higher for fish meal and poultry by product meal. Statistics indicated that apparent dry matter digestibility for juvenile cobia ranged 63.30-89.55% for animal products and 54.32-71.12% for corn gluten meal, defatted soybean meal/roasted and refinazil. The protein and lipid from both plant and animal sources were well digested by cobia. Apparent protein and lipid digestibility ranged 86.11-97.27% and 91.30–98.66%, for animal products, and 85.77–92.42% and 89.38–94.33%, respectively, for plant products. The cobia demonstrated a high capacity to utilize phosphorus in the ingredients. The apparent phosphorus digestibility ranged 66.33-75.20% for animal products, and 56.32-70.71%, for plant products. Amino acid availability reflected protein digestibility, except in meat and bone meal, where the availability of some amino acids was lower, possibly due to protein damage during processing. Digestibility information could promote the use of ingredient substitutions in least-cost formulated diets for cobia.

KEYWORDS: cobia, digestibility, feed ingredients.