SOLUBILISATION OF FIBER OF CASSAVA INCREASES STARCH ACCESSIBILITY FOR ENDO- AND EXOGENOUS AMYLASES

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**Abstract**

Use of local raw materials such as cassava, palm kernel etc. to decrease the dependence of import of common feed ingredients, such as corn and soy is becoming common to use in non-ruminant nutrition. I*n vivo* data suggests that addition of cell wall degrading enzymes/carbohydrases in the diet can reverse the adverse effects of the antinutritional factors present in these local raw materials.

CASSAVA root meal, is used as an alternative to cereal grains in non-ruminant diets in some regions in the world. Literature studies show that using cassava (upto 10% of the diet) in poultry did not have negative effect on the animal if carbohydrases were included in the diet. Current *in vivo* studies use xylanase, glucanases and amylases in diets containing cassava as a standard solution without considering the chemical composition of the fiber. This *in vitro* work suggests that cassava fiber components contain pectin. Total fiber content of 6 cassava samples from Asia was between 3-6%. Wet chemistry analyses confirmed that besides cellulose, pectic components are the main polysaccharides in cassava cell wall, specific components being galactose (30 %), xylose and arabinose (8% each) and rhamnose (3 %). Using a commercial pectinase containing product at 400 ppm, a 14% decrease in the total fiber content was obtained, with a significant decrease in galactose and arabinose moieties and a numerical decrease in rhamnose. Microscopy studies confirmed that 14% solubilisation of the fiber was enough to open the cell wall structures to release starch for enzymatic digestion by amylases.

