Protease enzymes and the benefits beyond cost savings

Figure 1 - Antinutritional effect of indigestible protein in the hindgut.

No digested protein flow in hindgut

Lack of protease activity

Protein fermentation

Intestinal lesions, inflammation

BC-VFA
Amines
Ammonia
High pH

Growth depression

Un-desirable bacteria

E. coli
Clostridia
Salmonella
Campylobacters

Fermentation metabolites, bacteriotoxins

Pathogenous bacteria

Intestinal lesions, inflammation

Scouring, mortality and morbidity

Lactic acid and bifido bacteria

Figure 2 - Effect of protease on gut morphology in broilers — Measuring villus height to crypt depth ratio.
Figure 3 - Protease controls the effect of pathogenic bacteria.

Source: Yan and others, 2012

Figure 4 - Protease maintains faecal score in high protein diets.

Source: Wang and others, 2011