

FATE OF FEED-INGESTED PLANT DNA IN MONOGASTRICS AND RUMINANTS

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The effect of the digestion process in the gastro-intestinal tract (GIT) of animal models on the fate and integrity of plant DNA has been widely evaluated since DNA availability and integrity is a key factor for hypothetical gene transfer of recombinant DNA from GM-crop-derived feeds to animal and human gut microflora and it is therefore one aspect of risk assessment for novel food and feed.

Using a real-time PCR approach to track plant DNA in animal samples, we have evaluated the persistence of feed-ingested DNA in blood and tissues of buffaloes and rabbits raised with conventional feeding and slaughtered under routine conditions (Tudisco et al., in press).

The results obtained demonstrate that fragmented plant DNA can be recovered from several tissues and from GIT of water buffalo, with maximum level of persistence for kidney. In rabbits the presence of fragmented DNA sequences from low and high copy number plant genes has been detected in blood, muscular tissues, organs and GIT.

In conclusion, our data can add some information on the fate of feed plant DNA in farm animals to widen the case histories available.

Tudisco R, Infascelli F, Cutrignelli MI, Bovera F, Morcia C, Faccioli P, Terzi V. Fate of feed plant DNA monitored in water buffalo (*Bubalus bubalis*) and rabbit (*Oryctolagus cuniculus*). Livestock Production Science, in press.