# EFFECT OF APPLE AND CARROT POMACE EXTRACTS ON PORCINE INTESTINAL EPITHELIAL CELLS IPEC-1

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***Abstract***

*Agro-industrial waste can be a valuable ingredient of animal feed that can reduce feed costs, minimize environmental impact, and improve the sustainability of animal production. However, the use of waste in animal nutrition needs further in vitro and in vivo tests, in order to establish the best inclusion rate for the achievement of best performances. The present paper aims to investigate the effect of individual and combination of apple and carrot pomace extracts on the porcine intestinal epithelial cells line IPEC-1. IPEC-1 cell cultures were treated with apple and carrot extracts in different dilutions for 24h and cell cytotoxicity was measured using MTT. Interaction between fruit pomace extracts were analyzed using the Chou and Talalay method. Exposure of IPEC-1 cells to individual pomace extracts or their mixture induced a dose dependent decrease of cell viability. This decrease was more pronounced for apple extract, that has proven a high cytotoxic effect at the lowest dilutions. The exposure of cells to the combination of both apple and carrot extracts results in an intermediate effect on cell viability than that produced by the exposure to each individual extract. The interaction between the two extracts was mainly antagonist for lower concentrations turning into synergic effect for the concentrated extracts. These toxicity data should be considered in formulation of feed for swine in order to find the best inclusion rate of apple and carrot pomaces.*

***Key words****: apple pomace, carrot pomace, intestinal epithelial cell, citotoxicity*