**Supplementary Material S1:**

*Reference diet for the Sensitivity analyses*

A typical grower diet currently in use by the UK pig industry with an analysed chemical composition of: 9.6 MJ Net Energy, 172.5 g crude protein, 11.07g lysine, 5.19g total Ca and 4.29g total P/kg of diet as fed, was used for this purpose. The dietary total P consisted of 2.47g phytate (**oP**) and 1.82 g non-phytate P (**NPP**) /kg diet. This default diet consisted of wheat- 600 g/kg, barley- 110 g/kg, rapeseed meal- 80 g/kg, soybean meal- 77g/kg and sunflower meal- 50 g/kg fresh diet. The incorporation of wheat made the diet relatively high in plant phytase at 480 FTU/kg. As the feed was assumed to be pelleted, some denaturation of the plant phytase activity was expected (Jongbloed and Kemme, 1990). The diet was supplemented with an extra 750 FTU *Escherichia coli* microbial phytase according to current industry practice.