Effect of digestible phosphorus level on performance and bone mineralization of piglets

C. De Cuyper[1], L. Nollet[2], M. Aluwé[1], J. De Boever[1], L. Douidah[1], S. Millet[1]*

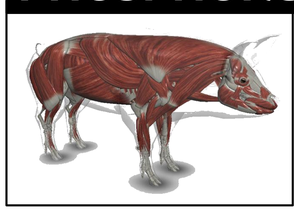
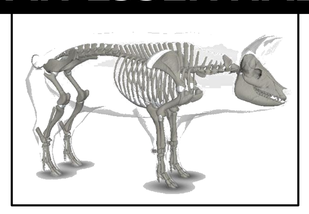
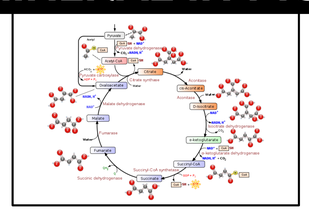
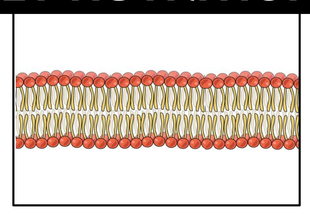
[1]Flanders Research Institute for Agriculture, Fisheries and Food (ILVO), Scheldeweg 68, 9090 Melle, Belgium

[2]HUVEPHARMA, Uitbreidingstraat 80, 2600 Berchem, Belgium

**carolien.decuyper@ilvo.vlaanderen.be*

15
P
phosphorus
30.974

PHOSPHORUS: AN ESSENTIAL MINERAL IN PIGLET NUTRITION

An adequate supply of P is important for optimal growth, development, and welfare of the piglet. However, P fed in excess may lead to high phosphate excretion into the environment. Determining the **optimal dP level** under different circumstances is therefore mandatory.

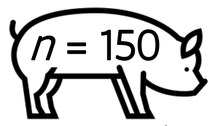
CONCLUSION

From 1.4 to 2.6 g/kg dP = better growth performance
= improved Ca and CP digestibility
= higher bone mineralization

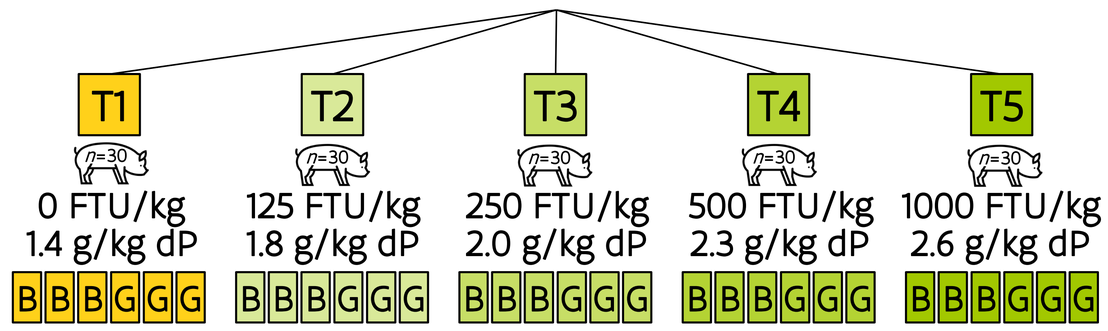
The results obtained in this trial confirm the importance of P and can be **used in a meta-analysis to update the recommendations for optimal dP levels** in piglet diets.

MATERIALS AND METHODS

Experimental design

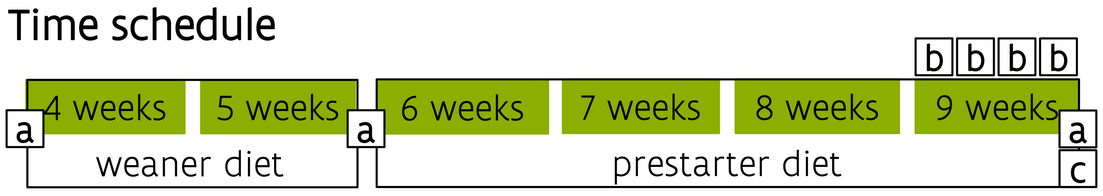


RA-SE sow x Piétrain boar



- Basal low-P (4.2 g/kg) diet without/with phytase
- Increasing concentrations of dP, obtained by increasing levels of a novel 6-phytase from *Komagataella phaffii*, by Huvepharma®

Time schedule

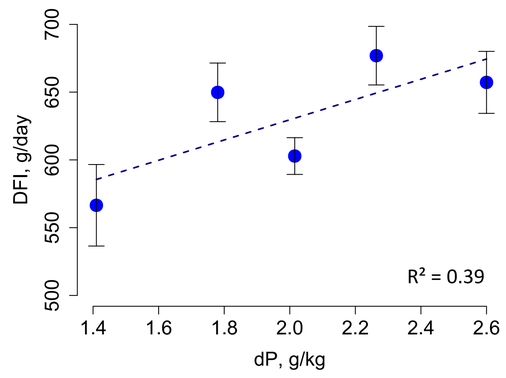


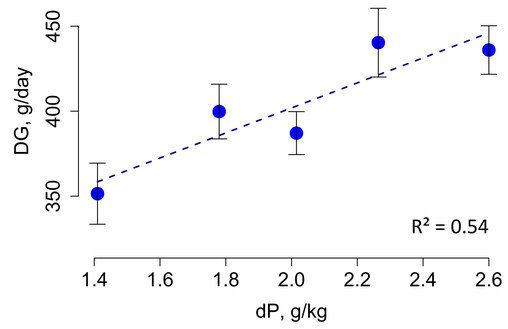
[a] Registration of BW and FI
[b] Fecal collection (4 days, 2 piglets/pen)
[c] Isolation of metacarpus IV

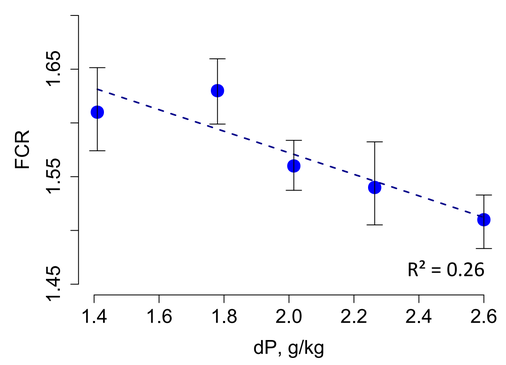
RESULTS

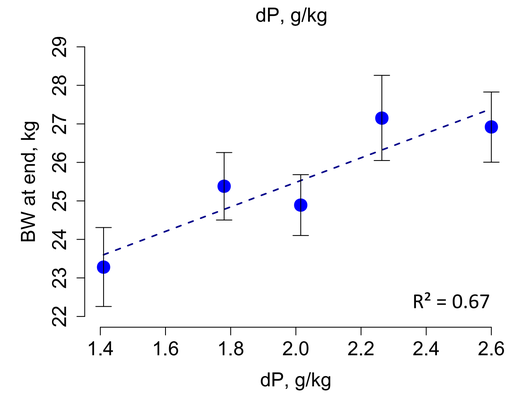
GROWTH PERFORMANCE

BW, DG, DFI and FCR (4-10 weeks) linearly improved with increasing levels of dP (p<0.01).



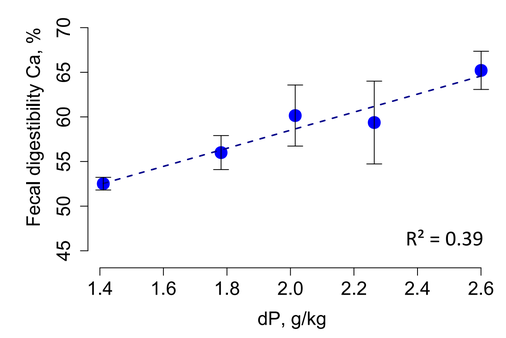


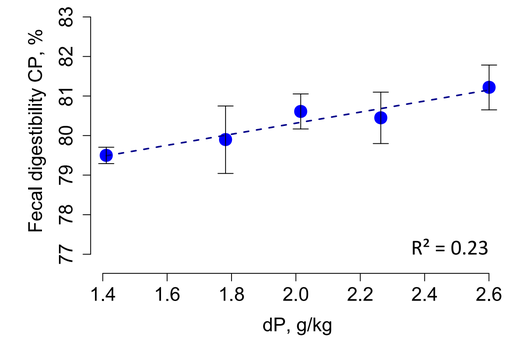




NUTRIENT DIGESTIBILITY

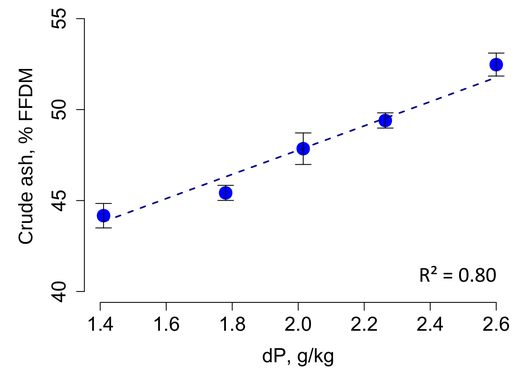
Apparent fecal digestibility of Ca and CP linearly increased with increasing levels of dP (p<0.05).

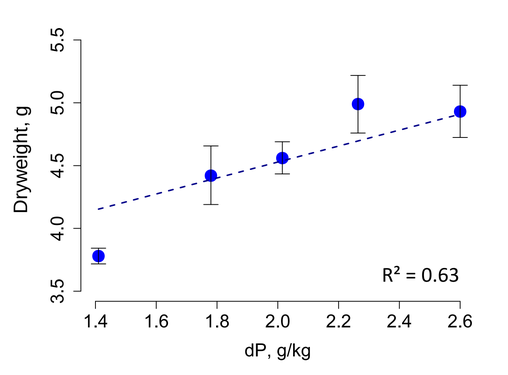




BONE MINERALIZATION

Crude ash concentration and dry weight of metacarpus IV linearly increased with increasing levels of dP (p<0.01).





Abbreviations: B, barrow; BW, bodyweight, CP, crude protein; (D)FI, (daily) feed intake; DG, daily gain; dP, digestible phosphorus; FCR, feed conversion ratio; FFDM, fat free dry matter; FTU, fytase units; G, gilt

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