

OptiPhos® Plus improves piglet performance at 250 FTU

Trial description

1 Set-up

- **Location:** University of Poznan, Poland
- **Trial period:** April – May 2018
- **Animals:** 36 male piglets (Polish Hybrid) aged 28 d (7-10 kg) individually housed and distributed over 3 treatments.
- **Feeds** (Table 1, corn/soy based, mash):
 - Weaner feed (day 1 – 21)
 - o Positive control: 7.5 g/kg Ca and 3.2 g dig. P
 - o Negative control: 5.9 g/kg Ca and 2.2 g dig. P
 - Grower feed (day 22 – 42)
 - o Positive control: 7.3 g/kg Ca and 3.0 g/kg dig. P
 - o Negative control: 5.7 g/kg Ca and 2.0 g/kg dig. P

2 Treatments

- Positive control
- Negative control
- Negative control + OptiPhos® Plus at 250 FTU/kg

3 Measurements

- Technical performance
- Digestibility : collection of faecal material of each piglet at day 35 to 39 of the trial, and pooled over the 5 days. Analysed for P, Ca, dry matter and protein.
- Metacarpus ash: of each piglets the metacarpus was taken from the front feets (so 2 bones per piglet).

Results

- OptiPhos® Plus added at 250 FTU/kg to the negative control brought final body weight and feed conversion back and above the performance of the positive control (Fig. 1).
- Similarly, OptiPhos® Plus at 250 FTU/kg increased significantly bone ash, P and Ca vs the negative control and brought levels up above the positive control (Table 2).
- Digestibility of faecal dry matter and protein was improved by adding OptiPhos® Plus even exceeding the positive control value (Table 3).
- Faecal P and Ca digestibility was improved significantly by adding OptiPhos® Plus (Table 3).
- Based on the bone ash results and the dig. P value measured, it can be calculated that 250 FTU/kg OptiPhos® Plus equals 1.11 g/kg aP and 1.02 g/kg Dig. P.

Table 1. Feed composition and analysis

| Feed material (%) | Weaner (d1-21) | | Starter (d21-42) | |
|--------------------------------|----------------|--------------|------------------|--------------|
| | Pos. control | Neg. control | Pos. control | Neg. control |
| Maize | 68.3 | 69.5 | 70.0 | 70.9 |
| Soyabean meal 48% | 27.1 | 26.9 | 26.0 | 25.8 |
| Fat (soyabean oil) | 0.42 | 0.00 | 0.00 | 0.00 |
| L-lysine HCl | 0.53 | 0.54 | 0.32 | 0.32 |
| L-threonine | 0.24 | 0.25 | 0.13 | 0.13 |
| L-tryptophan | 0.06 | 0.07 | 0.06 | 0.05 |
| DL-methionine | 0.23 | 0.23 | 0.13 | 0.13 |
| Sodium chloride | 0.50 | 0.50 | 0.50 | 0.50 |
| Limestone | 0.99 | 0.78 | 0.99 | 0.78 |
| Monocalcium phosphate | 1.13 | 0.68 | 1.09 | 0.59 |
| Vit. & mineral premix | 0.50 | 0.50 | 0.50 | 0.50 |
| Calculated analyses (%) | | | | |
| Crude protein | 18.6 | 18.6 | 18.0 | 18.0 |
| Crude fat | 3.6 | 3.3 | 3.3 | 3.3 |
| Crude fibre | 3.3 | 3.3 | 3.2 | 3.2 |
| Dig. Lys | 1.2 | 1.2 | 1.0 | 1.0 |
| Ca | 0.75 | 0.59 | 0.73 | 0.57 |
| P | 0.61 | 0.51 | 0.6 | 0.49 |
| Dig. P | 0.32 | 0.22 | 0.32 | 0.22 |
| ME (kCal/kg) | 3253 | 3253 | 3275 | 3275 |

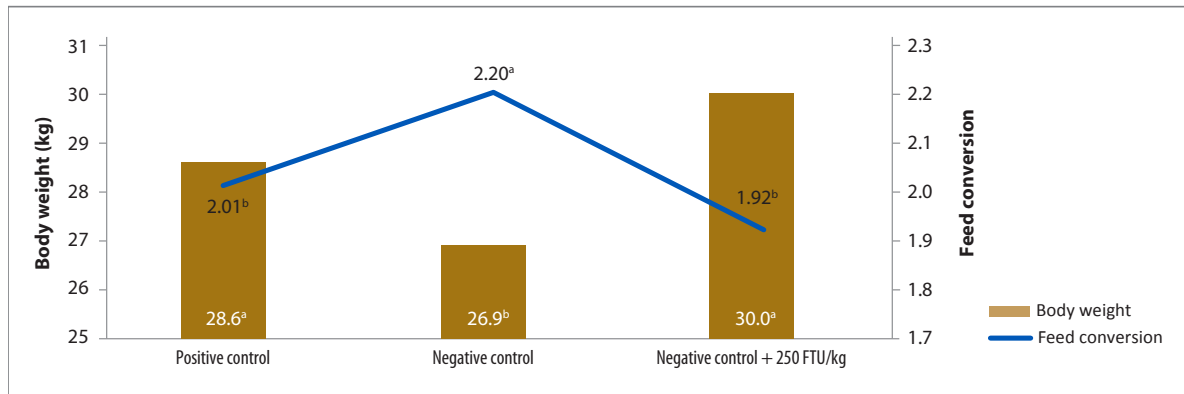


Fig. 1. Effect of OptiPhos® Plus at 250 FTU/kg on body weight and feed conversion (a,b values with a different superscript are significantly different at P<0.05)

Table 2. Effect of OptiPhos® Plus at 250 FTU/kg on metacarpus ash and its Ca and P content (%)

| | Bone ash | Ca | P |
|-------------------------------|-------------------|-------------------|--------------------|
| Positive control | 33.8 ^a | 33.2 ^b | 16.3 ^{ab} |
| Negative control | 29.9 ^b | 32.8 ^b | 16.1 ^b |
| Negative control + 250 FTU/kg | 34.6 ^a | 34.7 ^a | 16.5 ^a |

a,b values in a column with a different superscript are significantly different at P<0.05

Table 3. Effect of OptiPhos® Plus at 250 FTU/kg on digestibility of dry matter, protein, Ca and P (%)

| | Dry matter | Protein | P | Ca |
|-------------------------------|------------|---------|-------------------|-------------------|
| Positive control | 77,0 | 63,0 | 40.7 ^a | 64.4 ^b |
| Negative control | 76,2 | 61,6 | 27.6 ^b | 62.9 ^b |
| Negative control + 250 FTU/kg | 79,1 | 67,2 | 48.4 ^a | 82.4 ^a |

a,b values in a column with a different superscript are significantly different at P<0.05

Conclusion

- OptiPhos® Plus added at 250 FTU/kg to the negative control brought performance, metacarpus ash and P and Ca digestibility above the results obtained for the positive control group.
- Based on the bone ash results and the dig. P value measured, it can be calculated that 250 FTU/kg OptiPhos® Plus equals 1.11 g/kg aP and 1.02 g/kg Dig. P.