

OptiPhos® Plus is an improvement to OptiPhos® CT in piglets at 500 FTU

Trial description

1 Set-up

- **Location:** Zootechnicum Bocholt, Belgium.
- **Trial period:** May - July 2018
- **Animals:** Pietrain x Topics 20 piglets mixed-sex balanced over 18 pens
- **Feeds** (Table 1, corn/barley/wheat/soy based; deficient on dig. P, pelleted):
 - Weaner (day 0 - 14): 5.8 g/kg Ca and 2 g/kg dig. P.
 - Starter (day 15 - 41): 5.8 g/kg Ca and 2 g/kg dig. P.
- **Pigs set up in two rounds:**
 - First round: 81 piglets were divided into 3 treatments groups, each consisting of 3 pens with 9 piglets each
 - Second round: 63 piglets were divided into 3 treatments groups, each consisting of 3 pens with 7 piglets each

2 Treatments

- Control
- Control + OptiPhos® Plus at 500 FTU/kg
- Control + OptiPhos® CT at 500 FTU/kg

3 Measurements

- Technical performance (body weight & daily gain (individual piglet)), feed intake & feed conversion (per pen).
- Digestibility: at 5 weeks post weaning, faecal samples were rectally collected per pen, pooled, frozen, dried and analysed for marker (TiO_2) and total P in order to determine P digestibility.

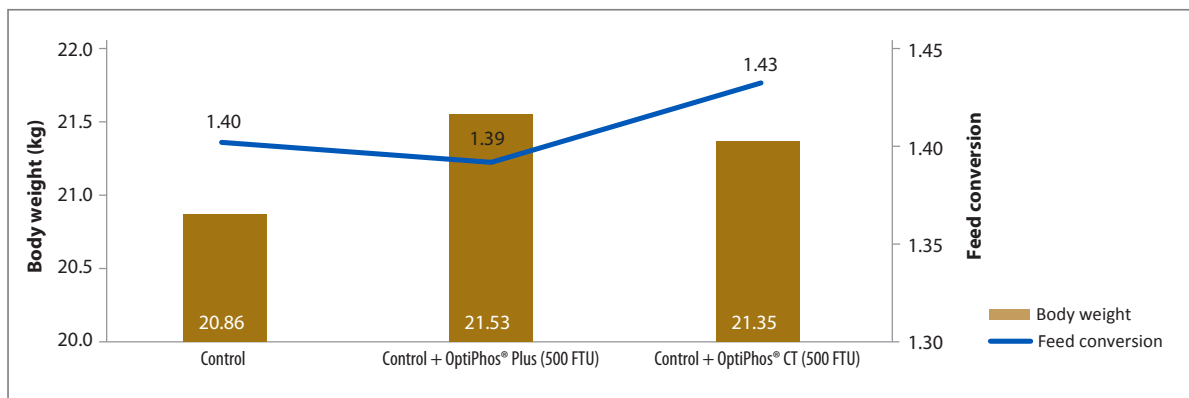
Results

- OptiPhos® Plus gave the highest end weight, outperforming the control (+0.67kg) and OptiPhos® CT (+0.18 kg). It also showed the lowest feed conversion (Fig. 1).
- P digestibility was highest for OptiPhos® Plus (65.0 %) versus OptiPhos® CT (59.4 %) and the control (42.6 %) (Table 2).
- Based on the dig. P value measured, and considering the feed intake and the P level in the feed, it can be calculated that 500 FTU OptiPhos® Plus equals 1.10 g/kg dig. P while OptiPhos® CT equals 0.82 g/kg (Table 2).

Table 1. Feed composition and analysis

Feed composition (g/kg)	Weaner (day 1-14)	Prestarter (day 14-41)
Wheat	308	351
Barley	250	200
Corn	150	150
Soybean meal HiPro	105	140
Sunflower meal HP	0	60
Wheat middlings	0	50
Whey powder (sweet)	75	0
Potato protein	20	0
Soy oil	16	15
Lime fine	4.5	10.5
MCP	3.0	4.5
Others*	28	19
Nutrient analysis (g/kg)		
Crude protein	171	175
Crude fat	40	41
Starch	423	433
Dig. Lys	10.6	10.4
Ca	5.8	5.8
P total	4.3	4.9
Dig P	2.0	2.0
NEpigs (kCal/kg)	2300	2200

* Salt, Calciumformiate, NaHCO₃, Synthetic Amino Acids, Vitamines and Microminerals

Fig. 1. Effect of OptiPhos[®] Plus and OptiPhos[®] CT on technical performanceTable 2. Effect of OptiPhos[®] Plus and OptiPhos[®] CT on P digestibility and improvement in P digestibility vs the control feed

	Dig. P (%)	Increase in dig. P (g P/kg feed)
Control	42.6 ^c	
OptiPhos [®] Plus	65.0 ^a	1.10
OptiPhos [®] CT	59.4 ^b	0.82

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

Conclusion

- OptiPhos[®] Plus added at 500 FTU/kg to a P deficient feed showed higher effect on performance in piglets compared to OptiPhos[®] CT.
- Based on the P digestibility values, a dig. P value at 500 FTU/kg of 1.1 g/kg could be calculated for OptiPhos[®] Plus while a value of 0.82 g/kg was obtained for OptiPhos[®] CT.