



## OptiPhos® Plus improves performance and bone ash already at low inclusion level

### Trial description

#### 1 Set-up

- **Location:** University of Leuven, Belgium
- **Trial period:** November - December 2017
- **Animals:** 600 male Ross 308 broilers distributed over 40 pens and 4 treatments
- **Feeds** (Table 1; pelleted, Corn/soy based):
  - Starter feed (d 0-7) was without adding phytases and fed to all treatments
  - Grower feed (d 7-21)
    - o Positive control (PC) containing 7.5 g/kg Ca and 3.4 g/kg aP
    - o Negative control (NC) containing 6.5 g/kg Ca and 1.9 g/kg aP
  - Finisher feed (d 21-35)
    - o Positive control (PC) containing 7.0 g/kg Ca and 3.1 g/kg aP
    - o Negative control (NC) containing 6.0 g/kg Ca and 1.6 g/kg aP

#### 2 Treatments (only grower and finisher)

- Positive control
- Negative control
- NC + OptiPhos® Plus at 250 FTU/kg
- NC + OptiPhos® Plus at 500 FTU/kg

#### 3 Measurements

- Technical result: growth, feed intake and FCR.
- At day 21: per pen 2 birds were selected of which the right tibia was removed (pooled to one sample) followed by determination of ash on fat free dry matter.

### Results

- OptiPhos® Plus added at 500 FTU/kg increased end weight up to the level of the positive control while FCR was 0.04 lower than the positive control (Fig. 1).
- Bone ash was significantly reduced in the negative control. Adding OptiPhos® Plus at 500 FTU/kg brought it back to the positive control.
- Based on the bone ash results, it could be calculated that 250 FTU OptiPhos® Plus equals 0.88 g P as MCP while 500 FTU equals 1.65 g P as MCP.

Table 1. Feed composition and analysis

Feed material	Starter (d 1-5)	Grower (d 6-21)		Finisher (d 21-35)	
		Positive control	Negative control	Positive control	Negative control
Corn	362	570	583	556	568
Wheat	250	0	0	0	0
Soybean meal 49 % CP	315	252	250	196	194
Rapeseed meal 33 % CP	0	100	100	150	150
Animal fat	0	30	30	40	40
Soybean oil	29	14	9.5	25.5	21.5
Limestone	13.9	11.1	11.6	9.7	10.2
MCP	15.6	9.8	3.1	8.4	1.8
Others*	14.8	13.1	13.2	14.6	14.6
<b>Nutrient composition (g/kg)</b>					
Crude protein (g/kg)	215	205	205	194	194
Dig. lysine (g/kg)	11	10.3	10.3	10.2	10.2
Crude ash (g/kg)	61	55	48	61	55
Calcium (g/kg)	9	7.5	6.5	7	6
Av. Phosphorus (g/kg)	4.5	3.4	1.9	3.1	1.6
ME (kcal/kg)	2977	3074	3073	3135	3136

\* Salt, Sodium Bicarbonate, Synthetic Amino Acids and vitamin/mineral premix

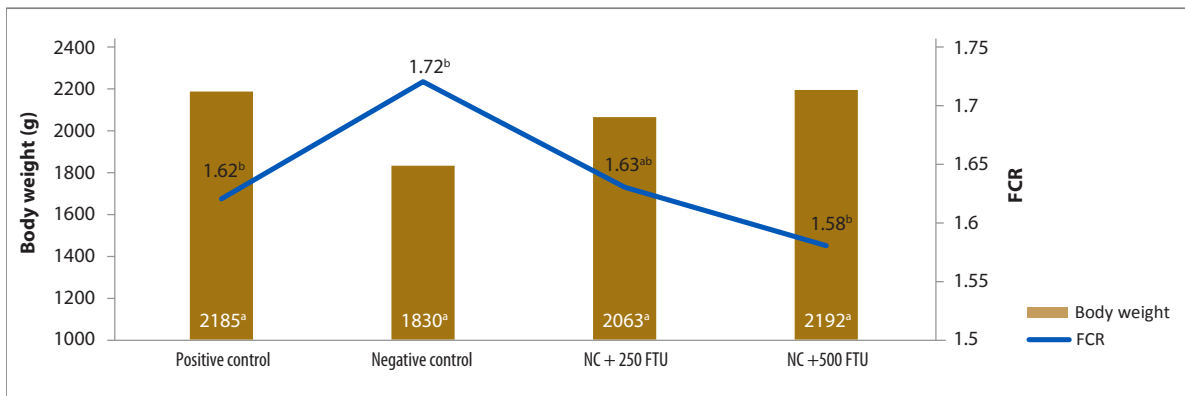


Fig. 1. Effect on body weight and feed conversion at day 35; (a,b values of line or column followed by different letter are sign. different ( $p < 0.05$ ))

Table 2. Doses response of OptiPhos® Plus on bone ash

	Tibia ash content
Positive control	41.6 <sup>a</sup>
Negative control	37.4 <sup>c</sup>
Negative control + 250 FTU	39.6 <sup>bc</sup>
Negative control + 500 FTU	41.5 <sup>ab</sup>

a,c values followed by different letter are sign. different ( $p < 0.05$ )

### Conclusion

- Adding OptiPhos® Plus to a P deficient diet at 250 and 500 FTU brought performance and bone ash up to the positive control level.
- Based on bone ash, 250 FTU and 500 FTU OptiPhos® Plus equals 0.88 and 1.65 g P-MCP per kg of feed.