



OptiPhos® outperforms competitor phytases on technical performance and available P in broilers

Trial description

1 Set-up

- **Location:** Schothorst Feed Research, The Netherlands.
- **Trial period:** July – October 2011
- **Animals:** broilers (males, ROSS 308)
- **Set-up:** 14 treatments, 9 replicates of 23 birds per treatment (reduced to 20 birds at day 5)
- **Feed:**
 - 0-5 d: same starter feed provided to all birds
 - 5-21 d: trial feeds (corn/soy based (57.6 % corn and 30.3 % soy); 2900 Kcal AMEn/kg, 21 % CP, 10.5 g dig. Lys, 6.5 % Ca and 2.25 % aP background).
 - Feeds were pelleted (80 °C) and phytases were dosed on the pellet.

2 Treatments

- A negative control.
- Three positive controls using increasing levels of added inorganic P as MCP at 0.6, 1.2 and 1.8 g per kg of feed.
- Five phytase treatments, either at their supplier-recommended dose or at double dose:
 - Ronozyme® NP at 1370 and 2740 FYT/kg
 - OptiPhos® at 250 and 500 OTU/kg
 - Finase® EC at 350 and 700 PPU/kg
 - Quantum® Phytase at 300 and 600 FTU/kg
 - Natuphos® at 500 and 1000 FTU/kg

3 Measured parameters

- Body weight, daily growth, feed intake, and feed conversion (FCR).
- Tibia ash: 4 tibias were Collected from 4 birds per pen (day 21) and pooled into one sample per pen.

Results

- When comparing phytases, at normal and high inclusion levels, OptiPhos® yielded the highest BW gain at 21 days (being 874 and 925 g respectively; Fig. 1).
- This effect was also seen for the FCR (1.37 and 1.36 at 250 and 500 OTU respectively; Fig. 2).

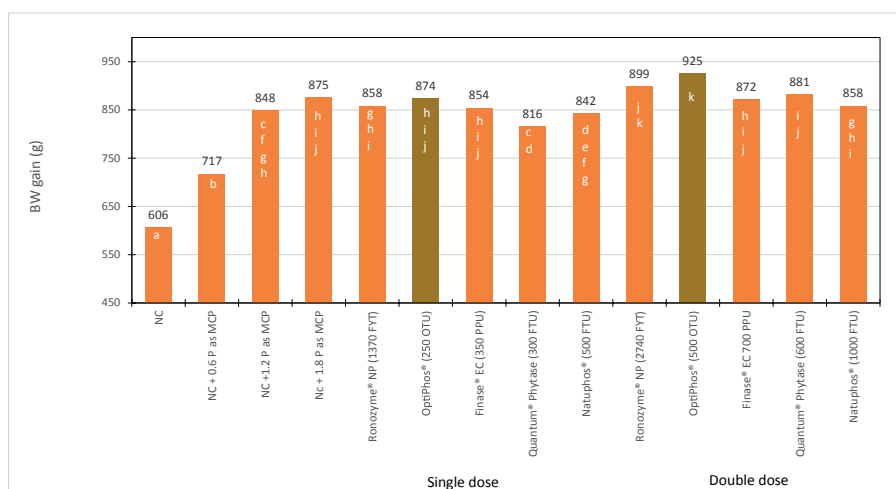


Fig. 1: effect of the inclusion of different phytases at normal and double inclusion levels on body weight gain at 21 days of age; NC= Negative Control; bars with a different letter are sign. different ($p < 0.05$)

From the bone ash results of broilers fed increasing levels of inorganic P, a response curve between tibia ash concentration and added P could be established. Based on the tibia ash analysed for all phytases, a relationship between the phytase unit and P could be established at different added doses (Fig. 3). As bone ash levels were highest for OptiPhos® compared to other phytases at normal and high inclusion level, OptiPhos® showed the highest P values yielding 1.40 and 1.63 g P at 250 and 500 OTU

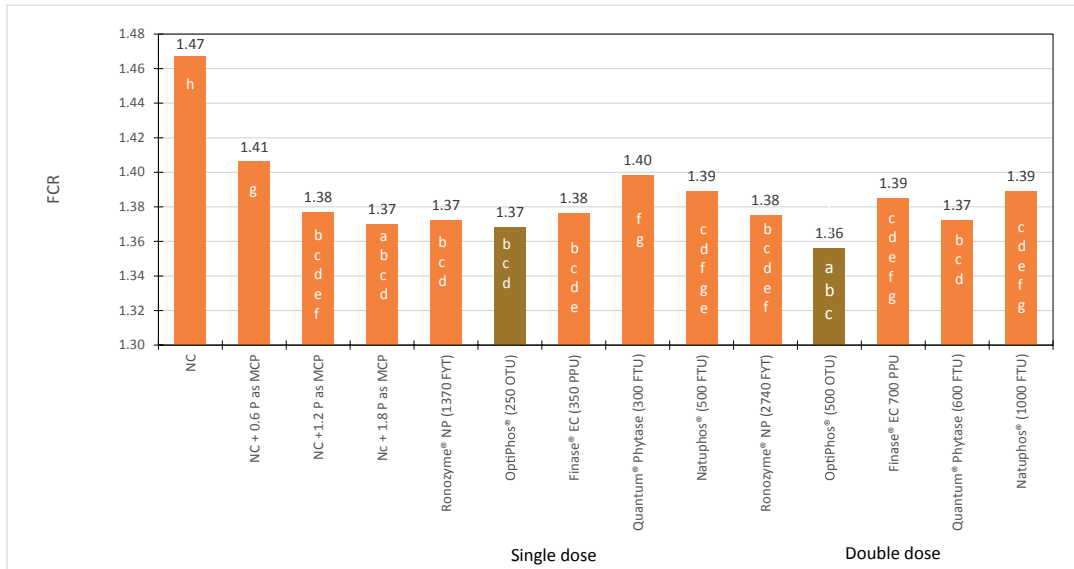


Fig. 2: effect of the inclusion of different phytases at normal and double inclusion level on FCR at 21 days of age; NC= Negative Control; bars with a different letter are sign. different ($p < 0.05$)

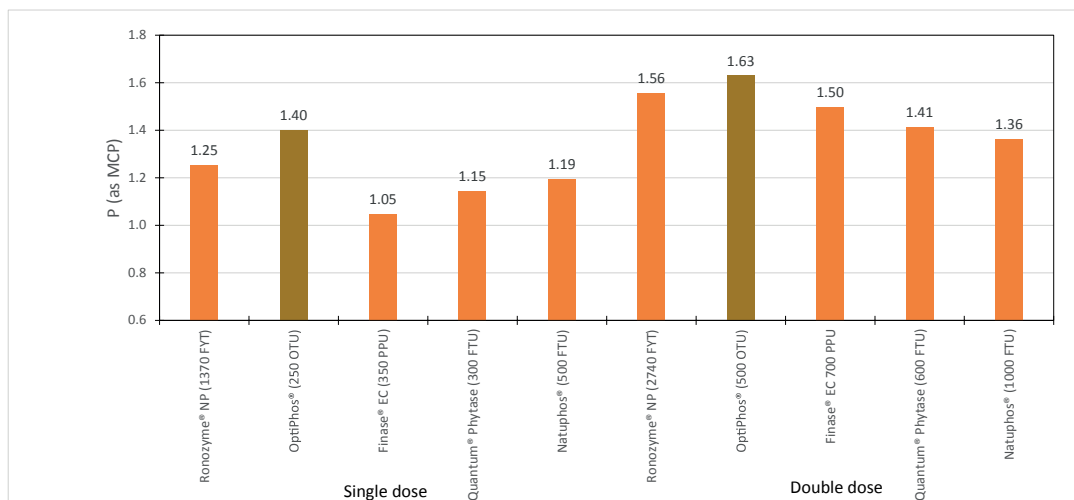


Fig. 3: equivalence between phytases at different inclusions levels and the P release

Conclusions

- OptiPhos® outperformed competitor phytases at normal and double inclusion levels, both on technical performance at 21 days and on P value.
- Equivalence between OptiPhos® and P as MCP showed an a value of 1.40 g aP and 1.63 g aP at 250 and 500 OTU of OptiPhos® respectively, which is higher than the current applied matrix values (1.25 g and 1.48 g aP respectively).