OptiPhos® outperforms Axtra® Phy on speed of phytic acid hydrolysis

Trial description

1 Set-up

- **Location:** : DIADEM, Russia
- **Trial period:** March/April 2014

2 Treatments

- OptiPhos® and Axtra® Phy *in vitro* research on kinetics.

3 Measured parameters

- **Kinetics (Michaelis Menten):** different parameters for phytase activity were determined in Glycine-HCl buffer at pH levels of 2, 2.5, 3, 3.5, 4 and 4.5 after which Vmax and Kcat were calculated. Vmax represents the maximum speed rate of P release for phytate, at maximum (saturating) substrate concentrations. Kcat is the turnover number, which is the maximum number of substrate (phytate) molecules converted per enzyme molecule per second.

Results

- The Kcat value of OptiPhos® was higher at all pH levels, in particular at lower pH. On average over all pH levels, the Kcat value of OptiPhos® was 893 per sec. vs 529 per sec for Axtra Phy (+41 %, Fig. 1).
- The Vmax value of OptiPhos® was higher at most pH levels, in particular at lower pH. On average over all pH levels, the Vmax value of OptiPhos® was 1045 vs 681 for Axtra Phy (+35 %, Fig. 2).

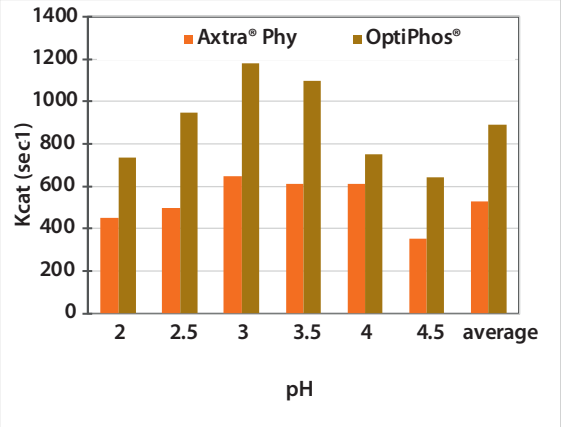

Fig. 1: the Kcat value of OptiPhos® and Axtra®Phy at different pH levels

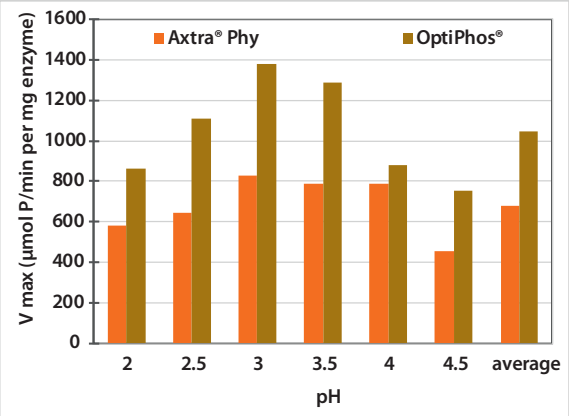

Fig. 2: the Vmax value of OptiPhos® and Axtra® Phy at different pH levels

Conclusions

- OptiPhos® works faster in breaking down phytic acid at different pH levels.

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