

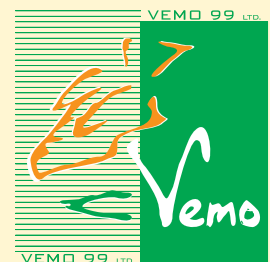
VEMOZYME[®] F 10000NTP



NATURAL THERMOSTABLE PHYTASE ENZYME

THE USE OF PHYTASE HAS VERY GREAT BIOLOGICAL, ECONOMICAL AND ECOLOGICAL BENEFITS:

- ✓ INCREASES PHOSPHORUS PHYTATE UTILIZATION RATE OF FEED BY 40%-60%
- ✓ INCREASES THE UTILIZATION RATE OF CALCIUM, ZINC, COPPER, MAGNESIUM AND OTHER MINERALS
- ✓ INCREASES THE UTILIZATION RATE OF PROTEINS, AMINO ACIDS, STARCH AND LIPIDS IN THE FODDER
- ✓ DECREASES THE ADDITION OF INORGANIC PHOSPHORUS TO THE FODDERS WITH 6-8 KG PER TON FODDER
- ✓ DECREASES THE PHOSPHORUS CONTENT IN THE ANIMAL'S EXCREMENTS AND THE POLLUTION OF THE ENVIRONMENT

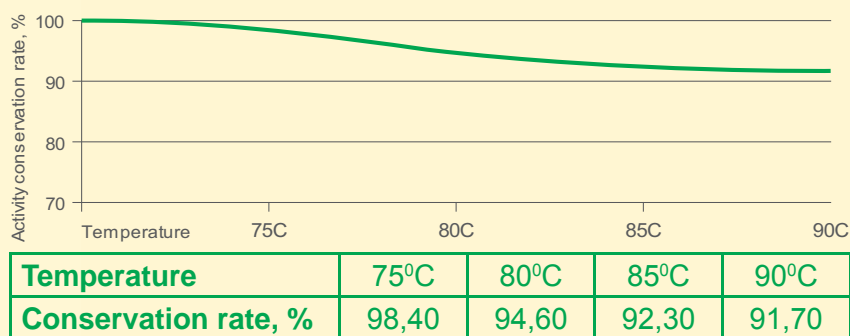


VemoZyme® F 10000NTP

Description: VemoZyme® F 10000NTP is an intrinsically thermostable phytase enzymes preparation with activity of min 10000 phytase units per gramme. One phytase unit corresponds to the quantity enzyme preparation, needed to release 1µmol inorganic phosphorus from sodium phytate per 1 minute at a temperature 37°C and pH 5.0.

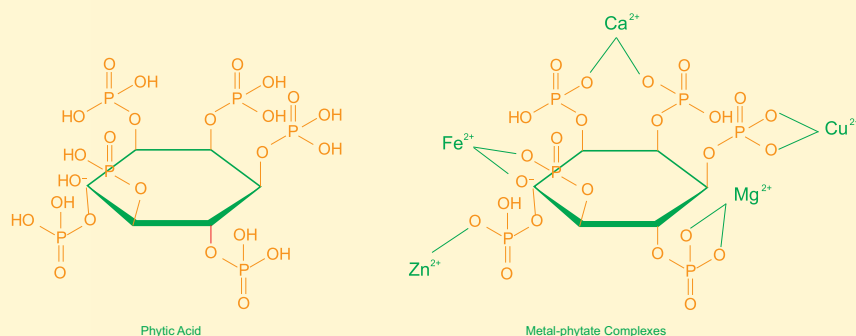
Enzyme characteristics: VemoZyme® F 10000NTP shows highly efficient enzyme activity in a wide range of pH from 2.0 to 6.0. The product is naturally thermostable and keeps stable activity during storing, homogenizing and granulating up to 90-95°C.

Table 1. Enzyme activity conservation rate of VemoZyme F 10000NTP under different temperature



VemoZyme® F 10000NTP is a new generation intrinsically thermostable phytase enzyme, which makes its great advantage over the major coated thermostable phytases. It is a well known fact that the additional coating of the most thermostable phytase products decrease the performance in the gut because of the highly extended dissolution time, which considerably reduce the utilization and efficacy of the enzyme. Therefore the appropriate dissolution time is an essential characteristic for the efficient use of phytase, and the best way to achieve it, is by applying a natural thermostable phytase, which ensures a prolonged gut activity without the undesirable side effects of the coating.

Application: About 60 – 85% of the total phosphorus in cereals, pulses and oilseed crops can not be assimilated from non-ruminants, because it exists in the form of phosphorus phytate.



The phosphoric groups in phytic acid show electronegativity, and have very strong chelating capacity with some cations, such as Ca^{2+} , Mg^{2+} , Zn^{2+} , Cu^{2+} , Mn^{2+} , Fe^{2+} , K^{+} etc., thus influencing the absorption and utilization of these minerals by livestock and poultry.

The phosphoric groups in phytic acid can also combine with cation groups on the protein, amino acid, starch and lipid in feed, and reduce their solubility, thus influencing the digestibility of these nutritional materials by livestock and poultry.



Phytic acid can also combine with the enzymes in the animal body, such as amylase, pepsin, trypsin, acid phosphatase, etc., and reduce the activity of these enzymes, resulting in a reduced utilization rate of ration nutrients.

Phytate is an important anti-nutrition factor in the feed of monogastric species. It can reduce the utilization rate of feed phosphorus and other nutrients by animals.

The utilization of phosphorus from the phytate becomes possible with the addition of phytase enzyme, because animals do not produce this enzyme themselves. The application of phytase is well known method for degrading phytate complexes and using of the phytate phosphorus from the plants.

Biological action: The use of phytase has very great biological, economical and ecological benefits:

- ◆ Increases phosphorus phytate utilization rate of feed by 40%~60%
- ◆ Increases the utilization rate of calcium, zinc, copper, magnesium, and other minerals
- ◆ Increases the utilization rate of proteins, amino acids, starch and lipids, in the fodder
- ◆ Decreases the addition of inorganic phosphorus to the foddors with 6-8 kg per ton fodder
- ◆ Decreases the phosphorus content in the animal's excrements and the pollution of the environment

Dosage: 50-75 g/t fodder for pigs and poultry (500 ÷ 750 U/kg)
30-45 g/t fodder for layer hens (300 ÷ 450 U/kg)

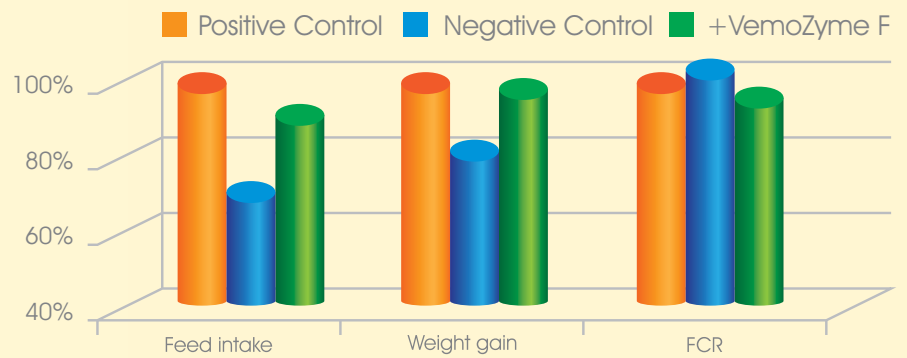
Storage: In dry and cool places, away from direct sunlight at a temperature under 25° C.

Matrix values for VemoZyme F 10000NTP, used for formulation of combined foddors, %

INDICES, %	BROILERS (50 g/t)	LAYER HENS (30 g/t)	PIGS (50 g/t)
Total Phosphorus	2700	2700	2700
Utilizable Phosphorus	2600	2600	2600
Utilizable Calcium	2700	2700	2380
Utilizable Lysine	400	400	400
Utilizable Methionine + Cystine	480	480	480
Utilizable Threonine	440	440	440
Utilizable Tryptophan	200	200	200
Crude protein	7000	7000	6300
ME (Kcal/kg)	980 000	980 000	735 000



VemoZyme® F performance charts



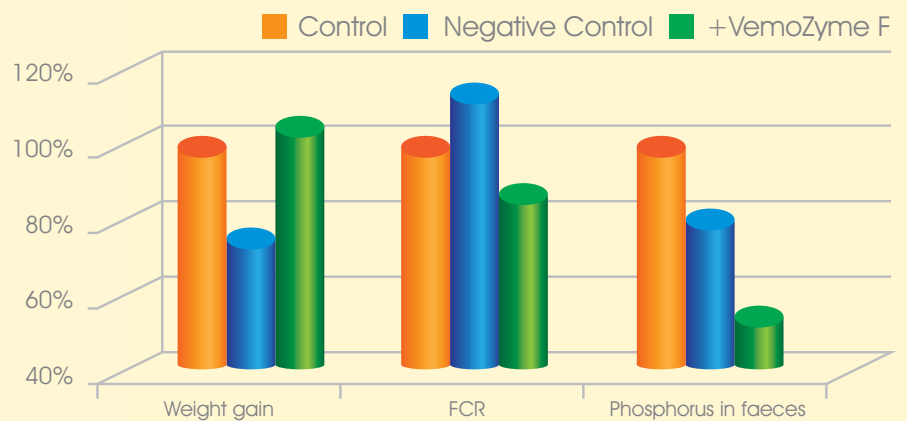
VemoZyme F in poultry feed

Experimental design:

Positive Control (PC): without phytase

Negative Control (NC): reduced AP compared with positive control

+ VemoZyme F: NC + VemoZyme F



VemoZyme F in pig feed

Experimental design:

Positive Control (PC): without phytase

Negative Control (NC): reduced AP compared with positive control

+ VemoZyme F: NC + VemoZyme F

By increasing the utilization of phosphorus and nutrients in the compound foders, **VemoZyme® F** improves production performance, and at the same time helps protecting the environment



Intertek



Intertek

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