



We create chemistry

Natugrain[®] TS

Maximizing nutrient utilization
in complex and modern poultry
and pig diets



Natugrain[®] TS is a preparation of endo-1,4- β -xylanase and endo-1,4- β -glucanase that supports sustainable animal production by targeting arabinoxylans and β -glucans in raw materials. It helps modern animal production systems by:

- Increasing the release of nutrients and energy utilization from the diet
- Reducing digesta viscosity
- Influencing the fermentation in the hindgut
- Improving performance

The science of sustainable feed that succeeds

Reducing broiler production costs with NSP-enzymes

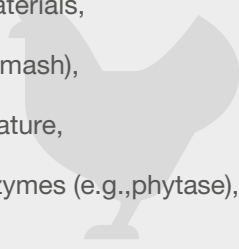
In view of the challenging scenario of increased feed-stuff prices the application of exogenous enzymes such as NSP-enzymes and phytase arises as a key element to maximize the utilization of dietary nutrients. This is especially because the investment in enzyme per bird is extremely low.



For that reason, some poultry nutritionists prefer to apply NSP-enzymes on top of feed formulation, which means, an energy matrix value is not attributed to the enzyme product. This raises sometimes the question of the economic viability of using NSP-enzymes in poultry diets.

Applying Natugrain® TS without matrix values on top of Natuphos® E?

The prediction and quantification of the energy released by NSP-enzymes is challenging because many factors can influence that, such as:

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- the diet composition
 - the quality of the raw materials,
 - the feed form (pellet vs. mash),
 - the conditioning temperature,
 - the addition of other enzymes (e.g., phytase),
 - the animal age, etc.

However, based on economic analysis performed with the results of feeding trials conducted by research partners, it is noticeable that the application of NSP-enzymes on top of a diet – without application of a matrix, will help to reduce broiler production cost.

Natugrain® TS pays back – and more !

In a feeding trial conducted in December 2021, 100 g/ton Natugrain® TS (xylanase+ β -glucanase) was added on top of a wheat-soy-based – diet for broiler chickens – from 1 to 38 d.

The diet contained 1000 FTU/kg of BASF Natuphos® E considering the full matrix values (Ca, P, AME and AA) recommended for this phytase.

The economic analysis was performed with the results of this test, assuming the current raw material prices (Wheat: 365 €/mt; SBM: 540 €/mt; CBoT Chicago, March 24, 2022) and based on 1.045 € per kg of liveweight (Bayerisches Landwirtschaftliches Wochenblatt, March 18, 2022).





Cost per kg of bodyweight. € cents

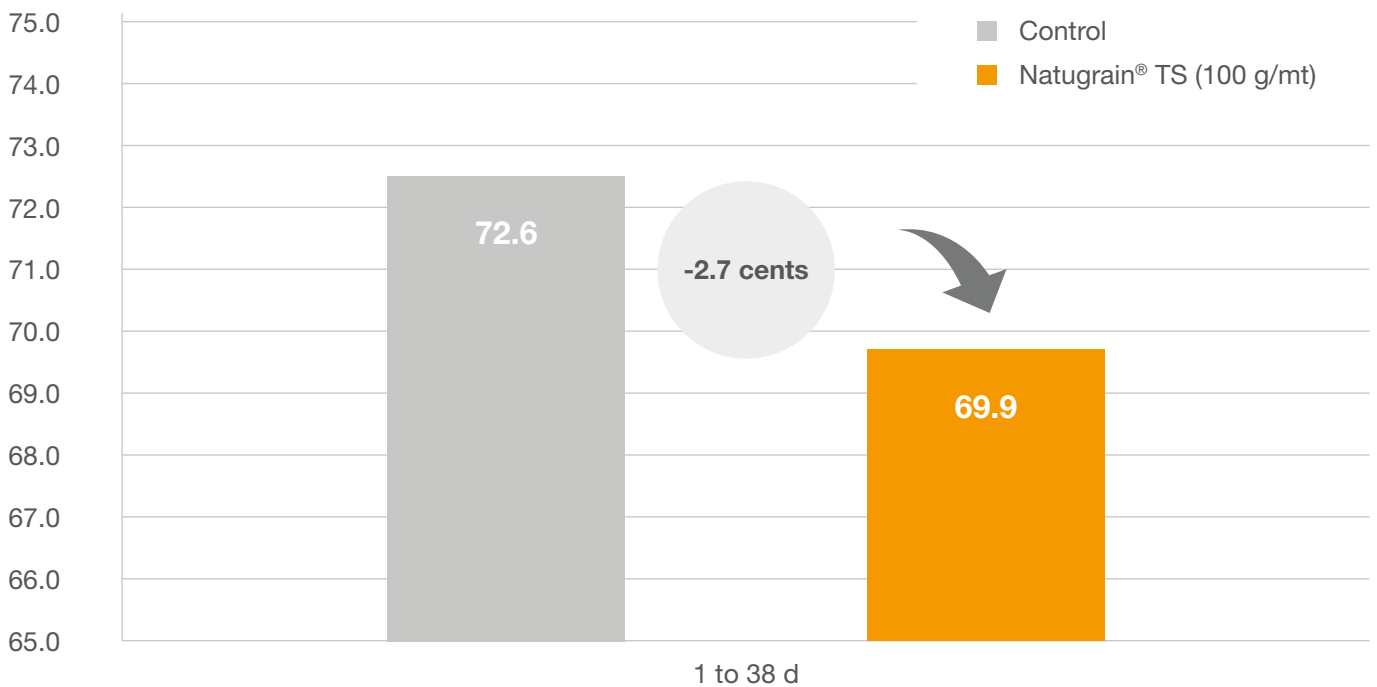
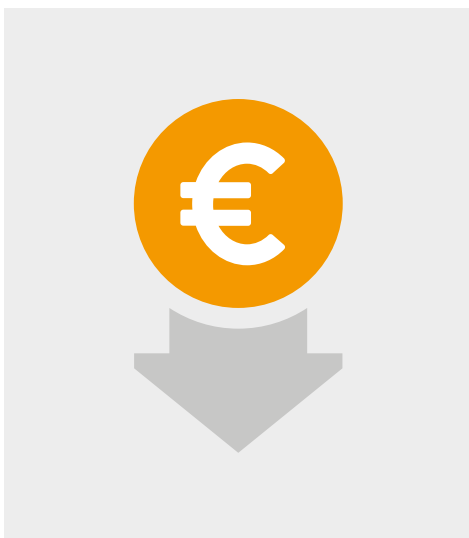


Figure 1. Cost with feed to produce one kilogram of bodyweight in EUR cents



- For every Euro invested in the enzyme there was a return of 18.7€, according to the current live chicken price and raw materials prices (Table 1).
- The economic benefits in the gross income per bird (1.7 cents) summed up with the lower investment in feed (5.4 cents) result in an extra value of 7.1 cents per bird.
- As the investment in Natugrain® TS was only 0.38 cents per bird, the return on investment is 18.7 (7.1 cents ÷ 0.38 cents).
- In this test, the gross income per bird was 1.7 cents higher when Natugrain® TS was used, as a result of a higher body weight. In addition to that, the feed cost per bird was 5.4 cents lower with Natugrain® TS, mainly due to an improved FCR and lower feed intake with Natugrain® TS.

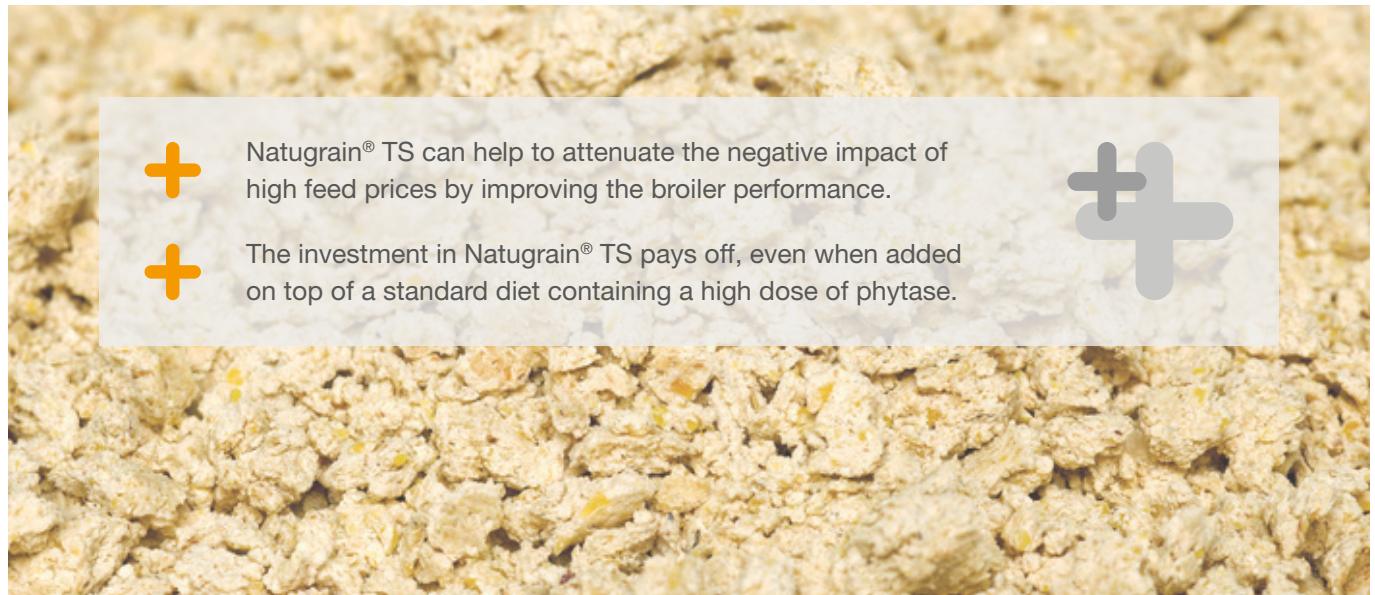
Return on investment of Natugrain® TS at 100 g/mt of feed

The on top addition of Natugrain® TS reduced the cost to produce one kilogram of bodyweight by 2.7 € cents, a reduction of 3.7 % in the costs with feed, while the investment for enzyme per bird was 0.38 € cents only (Figure 1). The impact on the production costs is mainly attributed to the improvements in feed conversion ratio (-6.3 FCR points in this trial) in the overall period of the trial.

Table 1:	Control	Natugrain® TS 100 g/mt
Investment in Natugrain® TS per bird (1 to 38 d), cents	-	0.38
Gross income per bird*, €	2.575	2.592
Investment in feed per bird, € (feed intake x feed costs)	1.760	1.706
Return on investment	-	18.7

*Based on 1.045 € per kilogram of liveweight

Attenuate the negative impact of high feed prices



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