

# Gaining flexibility in feed formulation when raw material prices are volatile

Raw material prices have been subject to volatility for decades. Despite a relatively stable price in the long term, abrupt changes can occur in the short term, with a severe impact on the farming industry. In such times, investing in feed efficiency becomes crucial.

---

by Marie Gallissot,  
For Feed Product Specialist, Olmix, France.  
[www.olmix.com](http://www.olmix.com)

---

Grains have always been subject to volatility, with cycles of steep rises followed by periods of relative calm. In their latest Agricultural Outlook, the OECD and FAO predict a steady evolution of grain prices in the long term. A moderate increase is projected, led by the continuous growth of the animal production sector which is expected to trigger some pressure on the supply of raw materials.

## Other factors

In the short and mid-terms, the projections are more hectic. Several factors impact grain prices. Among them, climate change is an important factor. It triggers uneven harvests from one year to another, leading to excess of grains in some years and a shortage of grains in others. This variation of supply comes with price fluctuations as a way to regulate the demand.

Other factors, external to agriculture, also impact feedstuff prices, such as currency fluctuations impacting export activities for major grain-producing countries or price spikes for other commodities such as metals and energy, which impact macro-economics.

The competition for grains by other sectors, like biofuels, further increases the pressure on market prices. Needless to say, pandemics hitting animal or human populations (Covid-19, ASF, PEDv, bird flu, etc) also strongly affect both market supply and demand, thus impacting prices.

Lately, the Covid-19 pandemic has amplified the already sensitive situation, leading to a seemingly endless surge in prices. While corn and soybean prices had increased by up to 70% at the beginning of

the year, it has not decreased over the summer. In France, the difficult wheat harvest has increased the regular volatility observed at the junction period between campaigns. The high demand for wheat by-products has reverberated on wheat price as well and the new campaign came along with high and volatile prices for all feedstuffs. The protein market follows the same trend. Tight soybean stocks are reported in the US, impacting the supply in many countries.

After soybean exportations had been disturbed by Ida hurricane in the US, the threat was then transferred to China, which was forced to shut down part of its soybean crushing plants, with obvious consequences on the local demand.

This situation is a serious threat to the industry, since it directly impacts the feed cost which is the main cost contributor in animal production. The tight markets generate problems of availability, quality and pricing of raw materials.

Feed producers then struggle to maintain good quality production with a minimal impact on feed cost and farmers must further cope with the unavoidable increase in feed price. Different strategies can be implemented to limit the consequences of the volatility on feed cost and quality.

The use of alternative ingredients is common. Local by-products, human or petfood waste products are often more affordable and attractive. Meanwhile, when the surge in price lasts, such by-products also suffer from a sudden high market demand and are subject to high volatility.

The use of older grain may also be an option, with special care needed with regard to quality, both from the nutritional point of view and the mycotoxin risk.

Formulating for optimum performance, adjusting the energy and amino acids levels to work on the cost to performance ratio rather than targeting maximum growth is also possible.

In the end, whether it comes from the use of feedstuffs with lower digestibility, reduced levels of energy or amino acids in the feed, or bias in the evaluation of the nutritional value of new feedstuffs, alternative strategies all have downsides that challenge feed efficiency.

Maintaining animal performance and farm productivity in this context is difficult. The



use of in-feed solutions that improve feed efficiency is pivotal. One of them, MFeed+ (Olmix, France) boosts the activity of digestive enzymes in the intestine to optimise the yield of digestion of the animals and make the most of the feed.

The innovative technology behind MFeed+ combines Montmorillonite clay and seaweeds in a way that is favourable for the stabilisation and activation of enzymes in the intestine, as well as increased contact between enzymes and nutrients in the intestine. It is thus able to support the use of all nutrients and ingredients, making it a master key for digestion and providing a high flexibility to nutritionists for formulating diets.

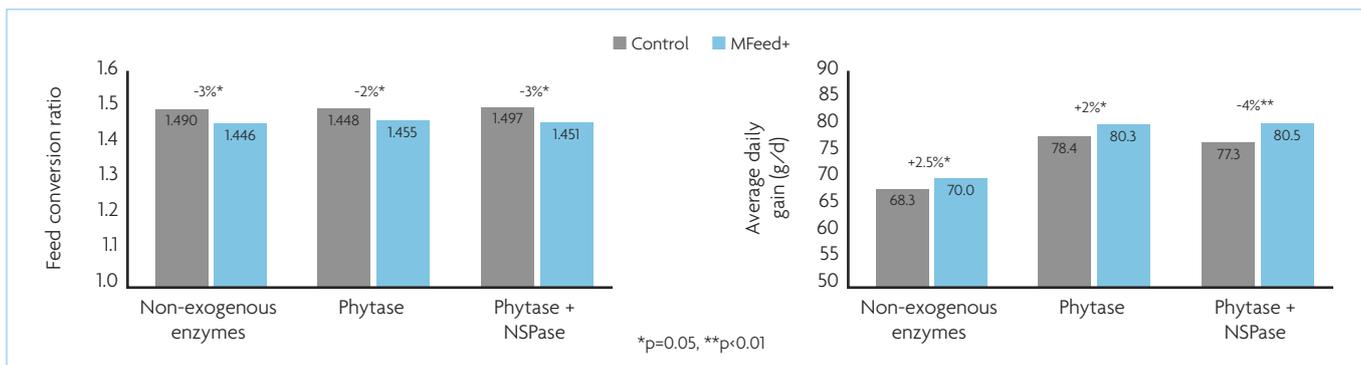
## Brazilian studies

A series of studies was conducted by Pr Rostagno and Pr Albino at the University of Viçosa (Brazil) to evaluate the capacity of MFeed+ to improve the feed efficiency of broilers.

The results showed that the use of MFeed+ increased the AMEn by 56 kcal/kg (+2% compared to the control) and the nitrogen retention by 6% (reflecting an improved use of proteins).

When testing MFeed+ in diets differing by their supplementation in exogenous enzymes, the results were consistent, showing a lower feed conversion ratio in the test group compared with the control group (2-3% decrease, Fig. 1), as well as a higher growth rate in groups supplemented with MFeed+ compared to the control (2-4%

*Continued on page 32*



**Fig. 1. Effect of MFeed+ on the performance of broilers fed corn-soybean diets.**

*Continued from page 31*

higher ADG, Fig. 1), independent of the use of exogenous enzymes.

Interestingly, the highest effect of MFeed+ on performance was observed in the grower and finisher phases (21-42 days), when the highest savings need to be made since the feed efficiency of the birds decreases while the feed intake is the highest (>75% of the feed intake of broilers is made after 21 days).

Economically speaking, the improvement in performance increased the net benefit over feed cost from US\$0.03 to US\$0.08 per broiler in the test groups compared to the control.

MFeed+ also proved to have technical and economic interest when used in diets

containing by-products. In France, MFeed+ succeeded in improving the performance of broilers fed a corn-wheat based diet also containing corn DDGS.

Growth performance was increased by 7% in comparison with non-supplemented diets for the whole period (+12% in the finishing phase) and was equivalent to the growth rate observed in broilers fed the standard corn-wheat based diet with no DDGS.

Moreover, the feed conversion rate was decreased by 4% in growing and finishing phases (-6 pts and -7 pts respectively), reaching lower values than those observed in the standard corn-wheat based diet.

Investigators thus highlighted the interest of using MFeed+ in diets using by-products

or low digestible ingredients as a way to decrease the feed cost. Similar results were obtained in the US, with MFeed+ leading to a net gain of \$0.05 per broiler when added to diets containing corn and wheat by-products and already supplemented with several digestibility enhancers.

With grain prices being high for a long period, short term actions to manage feed cost reach their limits. Improving feed efficiency with versatile digestibility enhancers can support multiple changes in the formula and limit negative consequences on animal performance and farm productivity. Olmix algae and clay-based technology proved that it can meet such expectations in different contexts of use. ■