

Out of the Bag



An introduction to Complete Feed Solutions

Welcome to the first edition of Out of the Bag, the quarterly newsletter from Complete Feed Solutions designed to keep you up to date with developments in the world of animal nutrition, and from time to time, challenge your perceptions.

I'm very excited to be able to tell you a little about Complete Feed Solutions. Established in May 2008 to provide technical and nutritional support to a range of clients in New Zealand and the South Pacific, the start of 2012 heralds a new era for us, thanks to the continued support of our customers. For example, we are pleased to announce that we are now able to offer a full time nutrition consulting service.

At Complete Feed Solutions we work closely with our customers to understand their needs and to help provide solutions which improve prof-

itability. Our client base includes commercial feed millers and home millers, feed ingredient suppliers, poultry breeding companies, poultry meat and egg producers and beef and dairy producers.

We believe that our strength lies in our ability and willingness to research, recommend and support a customised solution for your company's specific challenges.

We are very lucky to have an extensive network of local and international contacts who, like us, are passionate about the animal feed industry and agriculture in general. It is through such a network of experts that we can bring you updates on the latest technical developments which help to drive continuous improvement and optimise profitability in your business.

We hope that you'll be able to take advantage of these links by working with us in future.

In this edition of Out of the Bag, we look at the cost of feed and the benefit of regular reformulation from a cost savings point of view. While the example relates to layer feed, the concepts apply equally to pigs and ruminants, particularly in these times of volatility. It's worth noting that the potential savings require little additional investment or work on the part of the producer but can be substantial. Could you benefit from a regular review of your feeds?



I hope that like me, you are looking forward to 2012 and that it is a good year for you.

Natalie

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What are your feeds costing you?

We all know the cost of feed makes up a significant proportion of the total cost of production and it looks as if the costs of feed (or raw materials) is going to remain high for some time to come. In a recent article published in an international pig industry newsletter well know pig expert Dr. Ioannis Mavromichalis pointed out that for such an expensive decision, one can never be too vigilant, noting

that even a 5% reduction in feeding cost can make the difference between breaking even or breaking the bank!

While the article was intended for pig producers, the concepts apply equally to the poultry (meat and egg), dairy and animal feed manufacturing industries.

The recent volatility in the commodity prices has highlighted the value of regularly

reviewing feed formulations to either

1. minimize the impact of an increase in raw material prices;
- or
2. take advantage of a price decrease.

Although there are a number of factors driving the volatility in commodity prices, suffice to say the situation is unlikely to change in the foreseeable future.

What are your feeds costing you continued

As feed is such a large proportion of the cost in most animal production systems, it is one of the first areas where we focus our attention when looking to reduce costs. Unfortunately, while keeping input costs low is always an important consideration, reducing feed costs does not always result in greater profitability.

For example, when feed cost is reduced through purchasing a cheaper (usually lower specification) feed for laying hens, the result is often an increase in feed intake, possibly to the point where the cost of feeding also increases. But there are some simple tools and strategies which livestock producers and feed manufacturers should be investigating, along with their nutritionist, to make sure that they are getting the best value for their money.

Review your diets regularly

We recently examined the savings that could be achieved simply by reformulating a layer feed every second month to take account of changes in the raw materials cost.

Although many small and medium sized producers would have a fixed price for grain through most of the year, prices of other feed ingredients, including meat and bone meal, amino acids and oil can vary considerably as can the price of any additional grain purchased during the year.

For this analysis, we used raw material prices published in Pork Outlook since February 2008. Although these may not necessarily reflect prices paid by individual producers they do reflect the trend in price seen in the industry over a number of years. Diets were reformulated to meet the

minimum nutrient specifications of a typical post peak layer diet.

A reference diet was formulated using prices from February 2008 and the cost of this diet recalculated using prices every second month from March 2008 through to November 20011 (see Figure 1). The diet was then reformulated using raw material prices reported every second month from March 2008 through to November 2011 (bi-monthly reformulation) and the cost of these diets calculated.

For the purposes of the exercise, the minimum specifications of the feed were kept constant - so feed intake and production is unlikely to be affected. Similarly, it was assumed that the nutrient composition of the raw materials remained constant. We know that this is not always the case and that certain raw materials

“The potential cost saving from reformulating diets to take account of raw material price changes varied from just over \$5 000 per annum to just under \$17 000 per annum based on 50t of feed per week.”

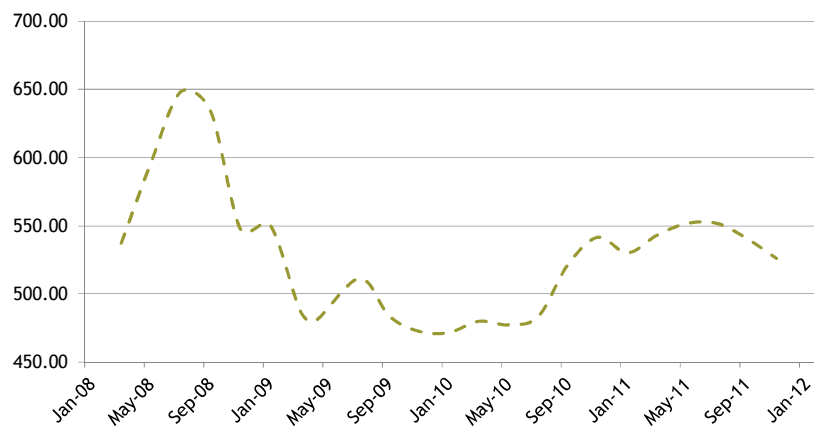


Figure 1: Variation in reference diet price (\$/tonne) February 2008–November 2011

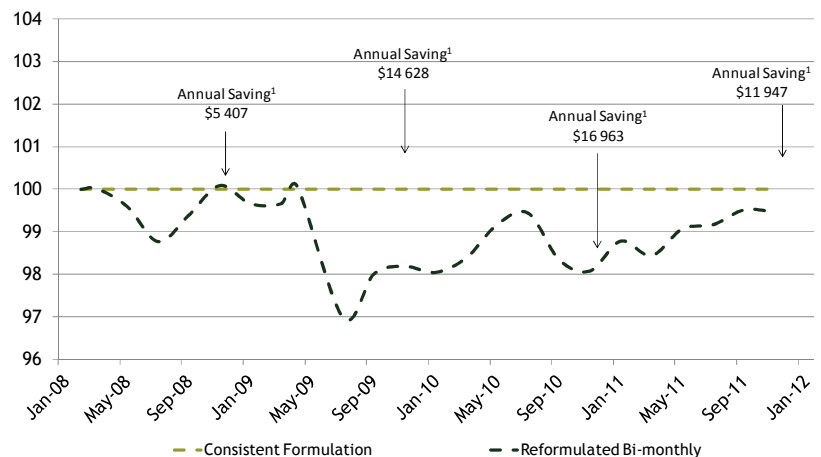


Figure 2: Relative cost of a layer feed reformulated every second month compared to a reference diet.

vary more than others. We will investigate the effect of this variation in a later edition of Out of the Bag.



The total cost (\$/tonne) of the feed for each of the bi-monthly reformulations was then indexed against the calculated price for the reference feed in any given month. For example, if the calculated price of the reference feed was \$600 and the bi-monthly reformulated feed \$590 the indexed value of the bi-monthly reformulated feed would be 98.

The results of this calculation is shown in Figure 2 .

Considerable cost saving

For an egg producer with 60 000 birds eating 110g of post peak feed per day (or a total of 50t per month), the potential cost saving of reformulating diets every two months varied from just over \$5 000 per annum to just under \$17 000 per annum.

Give us a call at Complete Feed Solutions if you would like to discuss how regular reformulation of your feeds could work for you.

Is meat and bone meal essential for poultry diets?

The traditional availability and relatively low cost of meat and bone meal (MBM) in New Zealand means that it has been and is commonly included in diets for both laying hens and meat producing birds. Moreover, there is a feeling that MBM is an essential component of a poultry diet. But is this really the case, or is MBM an ingredient we've simply come to expect in our poultry diets?

The cost of MBM relative to soya has increased considerably in recent times (shown in Figure 3 overleaf) where the actual cost of MBM is compared to that of soya purchased by one feed mill.

Overseas experience

In many countries around the world, the use of MBM or other processed animal proteins (PAP) is either prevented by legislation or restricted by lack of availability. While many farmers in the EU reported seeing a variety of production issues in their flocks soon after the ban on PAP, these issues have largely disappeared in recent times. In countries such as the USA, Canada and South Africa, where meat and bone meal is largely unavailable and has been for many years, corn or wheat and soya based diets

give excellent performance in both broilers and layers.

Protein content and quality

The biggest contribution MBM makes to a poultry diet is arguably as a source of protein and in particular essential amino acids. However, the protein (and amino acid) content varies according to the season and the quality (or digestibility) according to the level of processing.

Despite the fact that many plant proteins available in New Zealand (e.g. soya and peas) are low in methionine levels, the plant proteins tend to be a lot more consistent both in terms of amino acid quantity and quality. The ready availability and relatively low cost of synthetic amino acids makes it much easier for the modern nutritionist to balance a plant protein based diet to ensure optimum and cost effective bird performance

High potassium

One of the down sides of soya as the principal proteins source in a poultry diet is the high potassium content, which can lead to wet litter. However, potassium levels in typical MBM free diets for laying hens in New Zealand don't usually pose a problem.

Calcium and phosphorus

The calcium and phosphorus content of poultry diets is particularly important, with MBM an excellent source of these minerals. In fact, high phosphorus levels sometimes found in MBM can even be detrimental and can sometimes limit inclusion levels. In such cases, if usage levels are not restricted and a diet with high levels of available phosphorus is fed to birds there is a negative effect on calcium uptake, frequently observed as rickets in young birds or soft shelled eggs in layers.

Maximise available phosphorus

Most plant materials used in animal feeds contain phosphorus, although much of this is in the a form which is unavailable to monogastric animals. Maize and soya, for example, contain about 2.6 and 6.2g/kg of phosphorus respectively.

However, 75% of the phosphorus in maize and 60% of that in soya in in the form of phytate, which monogastric animals do not have the enzymes to digest. Australasian researchers have estimated that the average poultry diet contains approximately 10g/kg of phytate bound phosphorus. According to Selle and Ravindran (2007) a

“It is estimated that phytase enzymes can release the same amount of previously unavailable phosphorus from plant material as found in 22kg of a typical NZ meat and bone meal or 5kg of dicalcium phosphate.”

Meat and bone meal for poultry diets continued

good quality phytase enzyme will release about 1g of phosphorus per kilogram of feed in the average poultry diet. Over a tonne of feed, this equates to the same amount of phosphorus as that provided by approximately 22kg of a typical NZ MBM.

Salmonella risk

Although the levels of Salmonella in NZ poultry and eggs is very low by world standards, and there is always the possibility of salmonella contamination from other raw materials, MBM is generally considered a high risk raw material and risk management strategies for salmonella control are recommended.

Strategies for MBM free feeds

Formulating poultry diets using available rather than total amino acid levels, balancing the amino acid profile of the diet using synthetic amino acids and using a phytase enzyme which increases the availability of phosphorus from plant material are two strategies which have been successfully employed to ensure optimum bird performance in the absence of MBM in poultry diets.

Cost savings

The strategies which have been described above have additional benefits for produc-

ers in that they typically improve productivity and feed efficiency, largely by matching the requirements of the birds more closely with the supply of nutrients from the feed. In addition to the improvements in performance and the subsequently increase in income, total feed costs can often be reduced and overall profitability increased.

Compare relative values

In those cases where the use of meat and bone meal is not restricted (e.g. as a result of ruminant protein regulations) feed millers and producers should evaluate the use of meat and bone meal in their

feeds on the same basis they do all other raw materials - based on relative cost given the nutrients which that raw material will provide.

In recent years, the demand for MBM from South East Asia has driven the price of locally available MBM upwards. As a result the difference in price between MBM and other protein sources has shrunk. This makes it increasingly worthwhile for producers to regularly evaluate the value of MBM in their diets in comparison to other raw materials.

Talk to us about how you can do this.

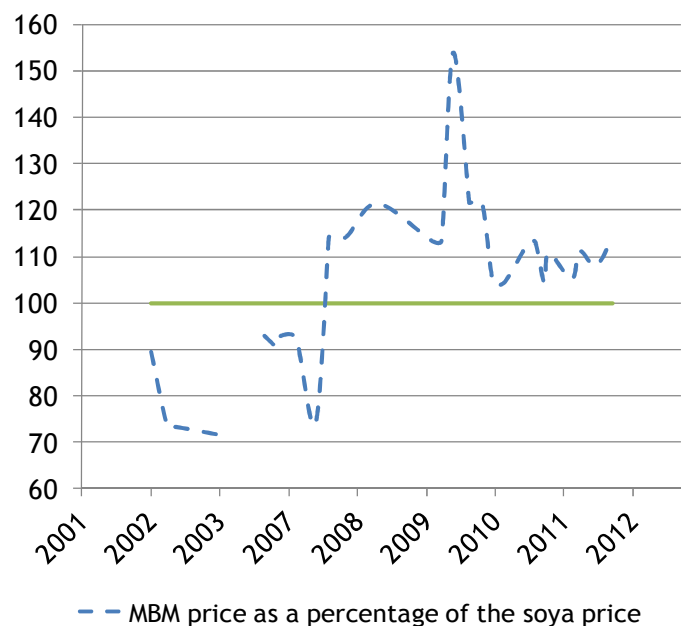


Figure 3: The relative cost of Meat and Bone Meal compared to Soya Bean Meal in New Zealand.

Complete Feed Solutions Optimising Nutrition

The consultants at Complete Feed Solutions Ltd. publish *Out of the Bag*. The newsletter serves both as a source of information for those involved in animal agriculture as well as a means for us to maintain contact with our clients.

Complete Feed Solutions provides a professional technical service to the livestock and animal feed industries. Our aim is to ensure that our clients use optimal production and feeding systems in order to maximise the return on investment. If you have any questions or would like to get in touch with us, please contact us using one of the contact details below.

