



## **Feed Management Systems**

### **Evolving Formulation Beyond Optimizing and Creating Diets to Purchasing and Profitability**

The feed industry worldwide has been faced with large swings of ingredient prices, and in some countries, shortages of key ingredients or changes in ingredient supply are a serious problem. This presents many challenges to the management of a feed business. This situation is likely to continue with predicted low levels of carry out stock of key ingredients such as Soybean Meal and Corn which suggests that the pattern of price instability is likely to continue into 2010. Larger quantities of Distillers Dried Grains and Solubles (DDGS) are now available in markets such as the US, due to increased ethanol production.

The formulation process is now much more involved than just optimizing and creating diets. Given that this new opportunity exists and that the food industry is under pressure to maintain profitability, feed companies are responding with a more dynamic approach to formulation.

The traditional role of the Nutritionist is still in place. Roles would include primarily the setting of the formula specifications driven by the animal's nutrient requirements. A parallel process would be the maintenance of the ingredient matrix to support accurate formulation and the setting of QC standards for purchasing to follow in selecting suppliers. However, as the opportunities in the ingredient market are now more dynamic, the Nutritionist is now playing an increasing role in prediction of purchasing requirements and future cost of goods. This is especially critical in integrated companies where the accurate pricing of future contracts is an essential part of profitable business.

Alongside the commercial nutrition process, the purchasing departments have challenges with forecasting future contracts. DDGS can be seen as both a protein and an energy source, and as such, not only will the quantities needed for optimal diets change, but the quantities of SBM and Corn will also be affected. The formulation program can be used effectively in forecasting the potentially variable ingredient requirements.

The trend that we see is for optimization to be split into three roles:

- Formulation to deal with the ingredients on hand for production of optimal diets
- Formulation for prediction of optimal requirements for ingredients.
- Formulation for the prediction of future cost and profitability.

Formulation of ingredients on hand is becoming more complex. It may well be that the planned ingredients do not come in on time or that the price situation varies from the original plan. For example, the price of DDGS on the spot market may be more or less competitive in real time compared to the contracts of SBM and corn. It may be that the current optimal usage of the by-product ingredients does not exactly match the supply. It is

possible to make manual adjustments to increase or decrease usage of ingredients in the formula, but it is better to use the Multi-blending technique to optimally increase or decrease the usage of such ingredients. An example would be to use Brill Formulation® Multi-Blend that has demonstrated the capability to make these adjustments at least cost, thereby driving profitability.

This process yields useful commercial information to the purchasing executives. If ever an ingredient is in short supply, that limit will have a cost to the company. When this situation occurs, the Multi-blend can be used to offer and evaluate additional quantities, possibly at different prices of the limited ingredients to work out an optimal purchase plan for the immediate future.

If the same technique is applied to future purchases, the impact of varying ingredient supply chain can be minimized. Increasingly, formulation is used to run price scenarios often running out over several months. The approach that is emerging is to break formulation into time periods. These may run by week or month in the medium term. The basis of the purchasing optimization is still the nutritionists' ingredient matrix and formula specification, but multiple time periods are applied.

Using this tool, the future demand for ingredients is modeled. While the formulations in the model are technically accurate, they are not used for production. Their value is in clearly showing the ingredient requirements by future weeks in a format that allows easy change of price scenarios. The purchasers can enter prices and get instant feedback on demand and compare plans as commodity prices change. This data can be tabulated and compared to the existing purchasing plan to quickly evaluate if there are excess or shortages of ingredients in the supply chain.

This multiple time period exercise generates another key set of management data – the future cost of goods or future feed prices. Traditionally feed marketing sells with an added margin, integrators will usually be formulating against market prices of poultry, eggs, pork, or beef, so the dynamic nature of the purchasing model can be extended to determine integrated profitability either of their own livestock operations or of their customers. For integrators, having an economic model of the future cost of finished product is a valuable tool in pricing future contracts.

Thus, formulation is becoming much of a general management tool in the feed business and is increasingly available as an active model to many departments. Even if the active model is not needed, the real-time data analysis is in demand at many levels of the business and can be extended easily as dashboards, forecasts or plans. There is technology available to support the evolving formulation processes, giving manufacturers piece of mind that these investments give them the decision making edge.

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### **Learn More**

We invite you to learn more about the solutions Feed Management Systems offers and to contact us regarding the services we provide that could assist you in leveraging formulation across your organization.

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