



# **Pet food nutrition: from recipe creation to finished products**

Discover the impact of an integrated software solution

## Software as your guide

The pet food sector is expanding rapidly. This growth presents many opportunities, but there are challenges too, particularly around ingredient sourcing, regulatory obstacles, and a shortage of labor.

The shortage of proteins requires the use of new, often plant-based, ingredients. At the same time, a humanization and premiumization of pet food is emerging, which will also have an impact on recipe formulation. In addition, sustainability has become more and more relevant and its influence on ingredient selection will continue to escalate. Meanwhile, labor shortages are making streamlined and automated processes critical to the success of the industry. In this environment, it's the innovative pet food producer who has a clear advantage — today and in the future.

Automation and innovation have proven to be the best solution in an ever-changing environment. With this white paper, we want to show you how software can serve you throughout the development and production process. Software can help you to always make the right decisions.

Discover how!

**High quality** raw materials are the building blocks of a good, high-performance feed. Careful selection of ingredients and close contact with your suppliers contribute to the success of every subsequent step in the production process. To ensure you're always on the same page, it's important to exchange information with your supplier in a standardized way. You also want to purchase raw materials that meet the standards both you and your customers demand, and you want to buy them at the optimal price, taking into account fluctuations in the futures market. You do this by staying up to date with current market information and by always being aware of projected sales volumes and prices.

A balanced recipe results in nutrition tailored to the animals' needs. Not only for existing recipes, but also for the optimization of new products and NPD (new product development) flows, you purchase ingredients that **meet the predetermined qualities at optimal pricing**. You do this using current market information and according to expected sales volumes and prices.

You know better than anyone that you must always anticipate changes in raw material availability, price, and quality, as well as trade restrictions that affect both the purchasing and formulation processes. If you anticipate these variations accurately, you mitigate the risk and volatility in the commodities market and purchase the required quality at the optimal cost. The aim is to do this while always meeting the requirements and expectations set around claims and nutritional properties, etc. This allows you to **gain both a financial and operational advantage**. Management information from the market, the ability to adjust recipes quickly and easily, and a helicopter view of available stocks are crucial in this respect.

Once a contract has been agreed, quality control ensures that the delivered products meet the predefined standards and requirements. **Product specifications act as a guide throughout the development and production process and are a valuable source of information for internal and external stakeholders**. Naturally, you also want to record and document in detail the quality of your manufactured products.

To streamline this process, good communication between all internal and external stakeholders is crucial. Information should always be readily available so that you can act quickly when necessary. **Digitization, standardization, and centralization are key**. BESTMIX® Software gives you maximum control and flexibility with its integrated software solutions. Our integrated approach spans the entire process, from purchasing and R&D, through recipe formulation and quality control, to production and sales.

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## Forward contracting and risk management

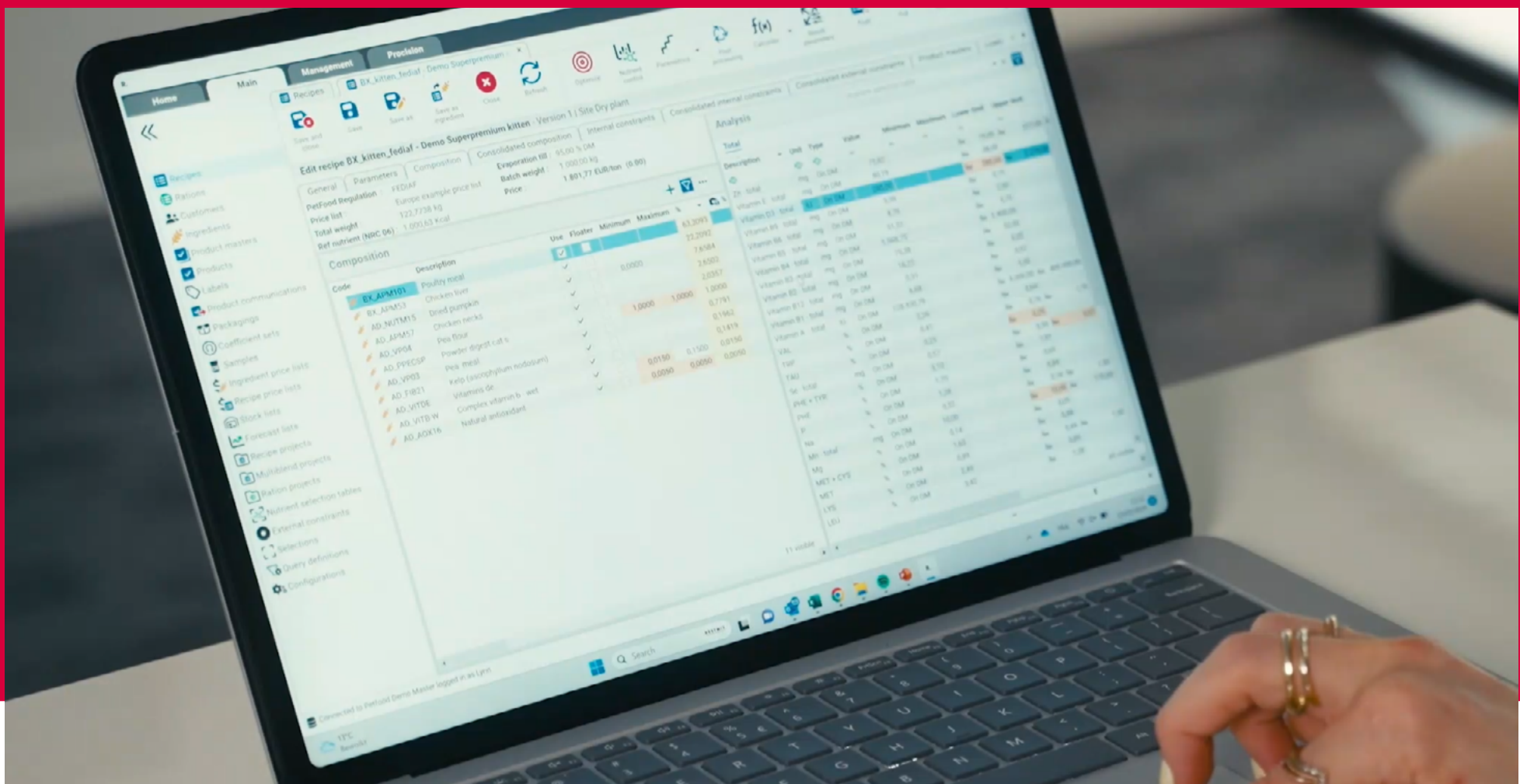
Anyone who can successfully map out the commodities market has an advantage in the feed industry. **BESTMIX® SpecTrack unites all raw material data from your suppliers on one IT platform.** Our software tool ensures that your suppliers always provide their product specifications in a standardized manner. This means you can access the information centrally and always have access to a single version of the truth. Sharing information via e-mail and different documents is finally history.

And BESTMIX® SpecTrack doesn't just ensure standardized product specifications. By cleverly setting up risks and claims you want to secure with your suppliers, you always exchange the right documents with each other. BESTMIX® SpecTrack provides your supplier with requests for the right certificates and indicates which forms need to be completed. Everything is fully automated for convenience and above all to prevent errors.



The integration of BESTMIX® SpecTrack and BESTMIX® ERP Suite, ensures that, if you wish, your purchasing professionals can only buy raw materials recognized by BESTMIX® SpecTrack. In this way you avoid buying from less reliable suppliers and/or buying raw materials that don't meet your quality standards.

Our software makes these product specifications **easily accessible at every stage of the production process**. They serve as a reference value for the composition of your recipes with our formulation software, BESTMIX® Recipe Management. After a quality check with BESTMIX® Quality Control, you can immediately use BESTMIX® ERP Suite to determine whether the supplied raw materials meet the product specifications.



## Smart purchasing starts with an integrated vision

The purchase and selection of raw materials is part of your internal ecosystem. The main thing is to estimate your need for different raw materials as accurately as possible. Our **Multiblend** option in BESTMIX® Recipe Management helps formulation and purchasing managers to formulate their recipes in detail, so that they always meet the demands of the market.

Historical information, enriched with current data such as seasonal variations and harvest yields, provide a basis **for forecasting the raw materials you'll need in the future**. In addition, if you know exactly which raw materials you currently have on hand, you can efficiently align your purchasing strategy with the expectations of both internal and external stakeholders.

BESTMIX® ERP Suite makes an inventory of the raw materials already available and the deliveries that you've already scheduled based on contracts at an agreed price. With our software solutions you can easily determine which purchases still need to be made to complement your current and future stocks.

Our experts know better than anyone how the animal feed industry is constantly innovating and evolving. The feed the market expects today isn't necessarily what your customers will want tomorrow. Raw materials that today offer the optimum balance between availability, nutritional value, and pricing could soon become hard to source, go up in price, or deteriorate in quality. The integration of our software applications ensures that your purchasing department can always **respond quickly and efficiently to the changing needs of the market and the shifting landscape of the ingredients industry.**



## Quality Control as a foundation

As a producer you are responsible for the quality of the petfood you supply. Quality control forms an important foundation for managing risk and complying with legislation and customer contracts, as well as achieving certifications. **It is a baseline that runs through your entire business flow**, with the intake of raw materials as the first benchmark.

Thanks to the integration of BESTMIX® Quality Control, BESTMIX® ERP Suite, and the formulation software BESTMIX® Recipe Management, your quality manager always knows immediately **when, which, and how many samples are required** when a new batch of raw materials is delivered, both for internal analysis and for analysis by external labs. BESTMIX® ERP Suite, provides BESTMIX® Quality Control with information about the expected delivery and the required samples, while BESTMIX® Recipe Management delivers the reference values.

BESTMIX® Quality Control also automatically generates the necessary labels and notifications. BESTMIX® ERP Suite releases the load only after all samples have been taken and, if necessary, subjected to a conforming NIR analysis. If the test result doesn't meet the agreed standards, the batch won't enter the production process. By taking immediate action, you don't have to take more drastic action later in the production process.

BESTMIX® Quality Control **stores all test results digitally and makes an inventory of the samples**, which allows you to immediately submit the results of a specific batch for verification in the event of customer queries or inspections. You no longer have to manually enter sample data, which saves you a lot of time and significantly reduces the margin of error.

But there's more. **A software-driven and integrated analysis program also adds value.** Thanks to the integration of BESTMIX® Quality Control with our other software applications, you can map the average nutritional values of different deliveries and update your ingredient matrix. These data provide valuable input for the formulation within BESTMIX® Recipe Management. You can also use this information to challenge your suppliers if the delivery doesn't meet the agreed quality or if the premium paid for a promised higher quality turns out to be unjustified. If the quality exceeds the contractual stipulations, BESTMIX® ERP Suite takes that surplus into account, providing a financial saving in a simplest of ways.

The Procision option in BESTMIX® Recipe Management is ideal for formulating with different batches of varying quality and price. The software tool ensures that you can combine the different batches to create an end product of uniform quality. The combination of a batch with fat content A and a batch with fat content B then leads to an end product with the desired fat content C. The end product will therefore always contain the intended level of fat. In this way, you extract maximum value from every batch of raw material.



## The formulation and mixing process:

**up-to-date stock data and meticulous calculations are the key to success**

Formulating and optimizing your recipes requires seamless cooperation between R&D, logistics, purchasing, and production to meet customer/retailer demands and expectations. You take into account the nutritional characteristics, ingredients, taste, and claims, as stated on the packaging.

R&D

Logistics

Purchasing

Production

Customer  
demands

**BESTMIX® Recipe Management includes the effect on these properties** as well as extrusion and the cooking process in your recipe optimization. In NPD (new product development) flows, you respond to the market's expectations with regard to these characteristics for both own-brand and private-label products. The result is a recipe that your R&D department creates with the help of BESTMIX® Recipe Management according to the predefined parameters, internal requirements, and customer expectations.

Of course, this recipe still offers the **necessary margin for adjustment**, depending on stock on hand, availability on the market, purchase prices, customer demand, and the average quality of the stock. Multiblend automatically includes these parameters from BESTMIX® ERP Suite and BESTMIX® Quality Control. In addition, BESTMIX® Recipe Management's Multiblend option adds value to the development of premixes and semi-finished products that lend themselves to different recipes.

Thanks to our various integrations, you can easily and accurately estimate the nutritional value and other relevant properties of a particular raw material combination, resulting in a **cost-effective recipe that's always within the legal parameters your customer expects**.



## A straight line to production

The recipes generated by the Multiblend option in BESTMIX® Recipe Management, including the custom labels, are sent to BESTMIX® ERP Suite in one go. The bill of material contains all the raw materials required for production. Through the integration with BESTMIX® Recipe Management and its Precision option, you'll immediately know which silo contains the raw material you need for your recipe composition. **This integrated and digitized approach reduces the number of interactions between the formulation manager, the stock manager, and the production department.**

During the production process, you can introduce extra quality controls if desired. The captured data offers you insights to further adjust recipes and opens the way to using techniques such as machine learning to make production even faster and more accurate.

Once the goods are produced, BESTMIX® Quality Control once again streamlines the quality control process. BESTMIX® ERP Suite passes on all the necessary analysis. As with the purchasing process, BESTMIX® Quality Control adjusts the tolerances according to the type of animal the feed is intended for. It also allows you to request other relevant product data so **you can prove the quality of the end product to your customers and validate your certifications.**

## PET NUTRITION FACTS

**Ingredients:** Chicken Meal, Cracked Pearled Barley, Whole Grain Wheat, Pork Meal, Whole Grain Corn, Whole Grain Sorghum, Gluten Meal, Animal Fat (preserved with Mixed Tocopherols and Citrid Acid), Chicken Liver Flavor, Dried Beet Pulp, Fish Oil, Lactic Acid, Flaxseed, Pork Liver Flavor, Soybean Oil, Dicalcium Phosphate, Iodized Salt, Potassium Chloride, L-Lysine, Choline, Chloride Vitamins (Vitamin E Supplement, L-Ascorbyl-2-Polyphosphate, Source of Vitamin C, Niacin Supplement, Thiamine Mononitrate, Vitamin A Supplement, Calcium Pantothenate, Biotin, Vitamin B, Vitamin D3, Minerals (Ferrous Sulfate, Zinc Oxide), Sulfate, Manganous Oxide, Calcium, Mixed Tocopherols added to retain freshness, Taurine, Oat Fiber, Dried Peas.

### GUARANTEED ANALYSIS

Crude Protein (Min.)	17%
Lysine (Min.)	0.88%
Methionine (Min.)	0.38%
Crude Fat (Min.)	3.00%
Crude Fiber (Max.)	4.00%
Calcium (Ca) (Min.)	3.80%
Calcium (Ca) (Max.)	4.30%
Phosphorus (P) (Min.)	0.52%
Salt (NaCl) (Min.)	0.20%
Salt (NaCl) (Max.)	0.70%
Manganese (Mn) (Min.)	125 ppm
Zinc (Zn) (Min.)	150 ppm
Vitamin A (Min.)	5,000 IU/lb
Vitamin D (Min.)	2,000 IU/lb
Vitamin E (Min.)	15 IU/lb

**AAFCO Statement:** Animal feeding tests using AAFCO procedures substantiate that this dog food provide complete and balanced nutrition for adult dogs.



# Product specifications and e-commerce

Product specifications contain all the requirements that a recipe should comply with. These include product composition, nutritional contribution, allergens, feeding instructions, and so on. This information acts as a guide throughout the development and production process. The Product Specifications application within BESTMIX® Recipe Management bundles and visualizes this information, which you can give to your customers, packaging designers, or other relevant stakeholders in one go. It also provides valuable input to your e-commerce channels. So manual updating of spreadsheets is no longer necessary and **you gain a lot of time through greater efficiency.**

## **Are you ready to strategically manage your processes using BESTMIX® Software?**

Integrated BESTMIX® Software contributes to lower costs, greater efficiency, the highest standards of traceability, and maximum customer satisfaction at every stage of the production process. Curious about how it can improve your results and help you to speed up daily operations and use your time for more strategic tasks?

**Our experts would be happy to offer you a free demo and run through exactly what BESTMIX® Software solutions can do for you!**



**GET A PERSONALIZED DEMO**

