



# **From Reactive to Predictive**

## **How Smart Pet Food Producers Are Winning the Complexity Game**

Learn how to evolve from reactive operations to predictive performance — integrating formulation, compliance, and quality in real time.

# Introduction

The pet food industry is experiencing unprecedented growth. The global wet pet food market alone is projected to reach over €50 billion by 2030, with a CAGR of 6%. But here's the uncomfortable truth: **while the market expands, operational complexity is compounding faster than revenue.**

And the tools most producers are using to manage this complexity? Spreadsheets, standalone software systems that don't connect with each other, and manual processes that were "good enough" five years ago—but now limit efficiency and create data gaps.

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# 01

## The Market Reality: Growth Meets Rising Expectations

A fundamental shift is reshaping the industry. **45% of global pet owners now consider their pets family members**—demanding the same standards for pet food that they expect for themselves: fresh appearance, real-meat texture, natural aromas, and clean labels.

This emotional bond translates directly into purchasing behavior:

- **86%** of new wet pet food launches in 2024 featured health-related claims—up from 76% in 2020
- **66%** of consumers are willing to pay more for products with health-related claims
- **64%** want to exclude artificial colorants and flavors
- **27%** consider premium positioning their top purchase driver

The opportunity is clear. But so are the operational pressures.



# What this means for Pet Food Producers

Rising consumer expectations are colliding with tightening production constraints:

**Supply chain volatility** has become the norm. Protein supply constraints are intensifying as the global pet population grows. Animal health crises like avian influenza and African swine fever create sudden export restrictions. Climate impacts reduce supply chain resilience. The result: higher costs, inconsistent sourcing, increased inventory risk, and a race to find viable alternatives.

**Regulatory complexity** is accelerating. AAFCO Pet Food Label Modernization, FEDIAF standards, and market-specific regulations create layers of compliance requirements that evolve constantly—consuming R&D capacity that should be focused on innovation.

**Ingredient diversification** is no longer optional. Plant-based proteins, insect-derived ingredients, and novel protein sources are gaining traction, requiring formulation expertise and testing that most teams are building on the fly.

**Quality consistency** must be maintained across all these variables. Moisture management, texture consistency, and palatability cannot waver, even as ingredient sources shift and formulations adapt.

The traditional response? Add safety margins (over formulation). Buffer inventory. Accept production breaks. Accept dependency on who is on shift. Tolerate label rework.

**This approach optimizes for process consistency, not operational agility.**

And in today's market, that's becoming unsustainable.

# 03

## The Real Problem Isn't What You Think

Most producers believe their core challenge is **ingredient sourcing**. Get the right proteins at the right price, and everything else falls into place. But that's treating the symptom, not the disease. The actual problem is **information latency**, the gap between when conditions change and when formulations, purchasing decisions, and production plans respond. Consider what happens when a key ingredient's quality varies or its price spikes:

**The manual approach:** A formulator runs calculations in Excel, checks regulatory compliance separately, updates recipes, regenerates labels, communicates changes to production, updates purchasing—all taking hours or days.

**During that time:** Production either continues with suboptimal formulations, holds for updates, or purchasing makes decisions based on outdated assumptions.

Now multiply that across dozens of SKUs, multiple facilities, and constantly shifting market conditions.

# **The cost isn't just efficiency It's opportunity.**

While one producer is manually recalculating, another with integrated systems has already:

- Reformulated 20 recipes based on real-time ingredient pricing
- Validated compliance automatically across AAFCO, FEDIAF, and regional regulations
- Generated updated labels for all affected products
- Optimized purchasing decisions to capture favorable pricing windows
- Maintained consistent palatability despite ingredient substitutions

**The difference isn't working harder. It's working with systems designed for today's complexity.**



# 04

## Why Innovation Starts With Integration

As the Kemin Nutrasure research notes: “What often begins as a branding objective to meet consumer expectations quickly becomes a technical and operational challenge—with real implications for both formulation and supply chain design.”

This is where specialized nutrition software becomes strategic rather than simply operational.

**Modern formulation platforms address challenges that manual processes cannot:**



### **Eliminating Hidden Costs in Every Batch**

Manual formulation relies on safety margins, using more expensive ingredients “just to be sure” nutritional targets are met. Or you set extra bandwidth on nutrient constraints but then you are giving away nutrients. Across thousands of batches annually, these margins compound into significant waste.

Advanced software optimizes formulations using the **actual price and quality of individual raw material batches** in real-time, not “typical” values. The result: inventory reduction, higher margins, fewer production breaks. One click tests alternative ingredients—seeing exactly how changes affect nutrition, cost, and quality before committing resources.

## Automating Regulatory Compliance

Launching premium products with immunity claims, brain health benefits, or microbiome support requires navigating evolving regulations across multiple markets. Systems with built-in regulatory intelligence automatically adapt formulations to changing requirements. When products are created or refined, all legal and commercial documents—labels, datasheets, feeding guidelines—update in one action through customizable templates.

Days of manual label rework become seconds of automated precision.

## Transforming Quality Data into Predictive Intelligence

NIR analyses, lab samples, and quality measurements generate constant data streams. But when that data sits in disconnected systems requiring manual entry and comparison, issues are detected only after multiple batches are affected.

Integration with NIR instruments, scales, and external laboratories enables automatic, real-time quality data flow into formulations. Systems instantly compare results against predefined tolerances and flag out-of-spec materials—transforming hours of manual work into seconds of automated precision, and turning reactive quality control into predictive prevention. The next step is even AI in that predictive intelligence, but it starts with software that centralizes all of this. You could have a goldmine of data, but not using it. That is why BESTMIX Insights was created.



## **Building Supply Chain Resilience**

Ingredient shortages force production stops or emergency reformulations that compromise quality. Pre-validated backup formulations for every ingredient, combined with built-in price trend analysis and forecasted amounts, enable immediate deployment of tested alternatives when disruptions hit. Assess alternative proteins with a single click—seeing exactly how substitutions affect cost, nutrition, and palatability.

The shift is from reactive scrambling to proactive planning.

## **Maintaining Palatability Across Ingredient Variability**

Premium positioning depends on consistent taste, texture, and aroma. But as protein sources diversify to manage costs and sustainability goals, maintaining palatability becomes exponentially harder.

Cats and dogs have significantly different sensory needs. Palatability is affected by every production step—from protein source selection to fat oxidation state, moisture management, grind quality, and meat processing conditions. Even subtle variations can degrade the eating experience.

Integration of formulation software with species-specific palatability solutions enables sensory excellence even when working with alternative ingredients or restrictive claims. The technology handles formulation complexity while ensuring the eating experience remains premium—successfully launching products with novel proteins, plant-based ingredients, or clean-label claims without sacrificing the palatability that drives repeat purchases.





# 05

## The AI Advantage: From Reactive to Predictive

Today, AI is helping pet food producers move beyond automation to prediction.

AI-driven predictive models tailored to pet food production **enable proactive adjustments during manufacturing** by monitoring critical parameters in real-time. Instead of reacting to quality issues, producers receive alerts about nutrient content fluctuations before they become problems.

AI-based moisture management models, for example, act as advanced advisory tools throughout the extrusion process—optimizing in real-time rather than correcting retrospectively.

This isn't future technology. It's operational today for producers who've made the shift.



# 06

## What Matters Most

The gap between producers using specialized nutrition software and those relying on traditional tools isn't closing—it's widening. Consider these questions:

### About your current process:

- How long does it take to reformulate when ingredient prices shift significantly?
- What percentage of R&D capacity is consumed by regulatory compliance and label updates?
- How much do safety margins cost annually across all formulations?
- How quickly could you respond if a key protein source became unavailable tomorrow?

### About integrated systems:

- Which operational bottlenecks would disappear if formulation, compliance, quality control, and purchasing were connected?
- What would it mean for your innovation pipeline to test ingredient alternatives in seconds instead of days?
- How would real-time quality data integration change your ability to prevent issues rather than just detect them?

The producers winning in today's premium pet food market aren't just making better products—they're making better decisions, faster, with systems designed for the complexity they actually face.



**READY TO EXPLORE WHAT'S POSSIBLE?**

