

# LEVERAGING ARTIFICIAL INTELLIGENCE TO PREDICT PET FOOD PALATABILITY:

## HOW AI IS TRANSFORMING PALATANT DEVELOPMENT

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### WHY THIS MATTERS

Palatability is one of the strongest drivers of product success in pet food. Yet, predicting it remains challenging. Development still relies heavily on iterative animal trials, which are time-consuming, costly, and often identify failures late in the process.

At AFB, we are changing this approach by using artificial intelligence (AI) to predict palatability outcomes before testing. By combining historical data with formulation knowledge, we help transform development from trial-and-error into a more targeted and efficient process.

### THE CHALLENGE

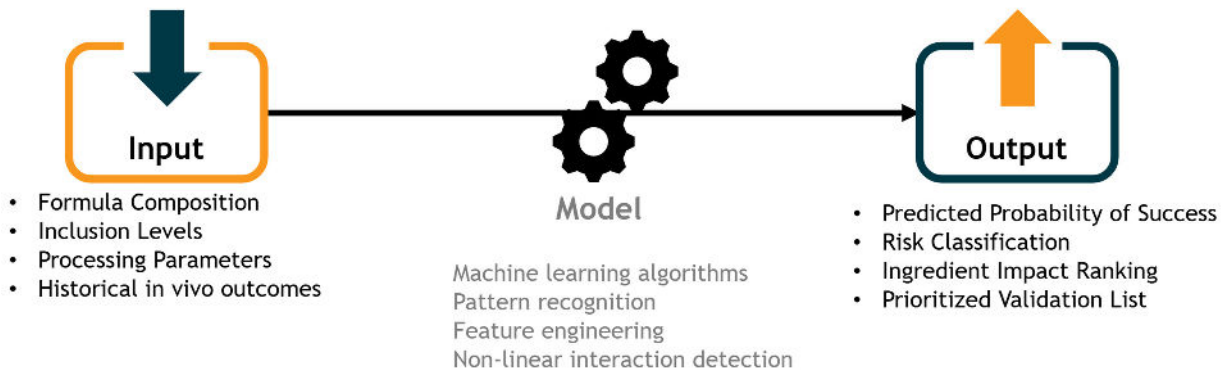
Palatability is the result of multiple interacting factors, including ingredients, inclusion levels, fat systems, processing, and animal variability. These interactions are complex and non-linear, making outcomes difficult to anticipate.

Because of this complexity, traditional approaches struggle to efficiently explore formulation space and consistently deliver high-performing solution.

### A NEW APPROACH: FROM TESTING TO PREDICTING

Instead of relying only on experiments, we integrate data across trials and formulations to identify patterns and predict outcomes.

Our models transform inputs such as recipe composition, ingredient levels, and processing conditions into clear guidance: which solutions are most likely to succeed and which carry higher risk.

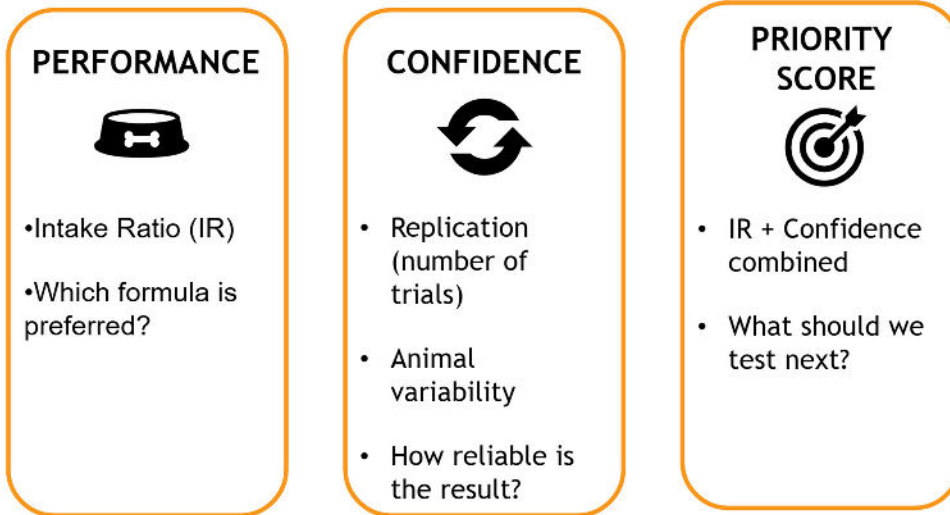


### FROM DATA TO DECISIONS

Our approach converts complex datasets into practical insights that guide development. Rather than focusing only on performance, we also consider how reliable each result is.

By combining performance with confidence, we generate a clear prioritization of what to test next. This allows teams to focus on the most promising formulations and avoid unnecessary trials.

How we rank formulations and ingredients?



$$\text{Priority Score} = f(\text{IR}, \text{Confidence})$$

### WHAT THIS ENABLES

This predictive approach allows us to:

- Identify high-potential solutions earlier
- Reduce experimental burden
- Focus on the most impactful ingredients
- Improve consistency of results

In practice, large experimental spaces can be narrowed down to a smaller set of high-confidence candidates, accelerating development and improving outcomes.

### A SMARTER WAY TO DEVELOP PALATANTS

Artificial intelligence does not replace expertise—it enhances it. Scientific knowledge remains central to interpretation and validation, while predictive models help guide decisions and reduce uncertainty.

By combining data, science, and AI, we enable a more efficient and confident approach to palatability development.



To learn more about this topic, or to speak with our Science & Technology experts, please reach out to your AFB Sales representative or [afbinternational.com/contact](http://afbinternational.com/contact).