



*The following protocol is in a process of continual improvement and will be updated periodically.
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Feed Formulation

When designing experimental feeds there are many considerations, some of which will be specific to your ingredient, the species of interest and the experiment. Below are general guidelines to aid in experimental feed formulation. While we hope these notes are helpful, they are by no means exhaustive thus it is crucial to consult an experienced scientist and nutritionist prior to designing feeds and an experiment.

Here are general guidelines for experimental feed design:

- Determine appropriate pellet size and type (floating or sinking) based on the species of interest and age of the animal.
- Pellet size and type should be the same across all treatments.
- Some ingredients may affect the resulting color of the fillet or product. Additional ingredients may be added to prevent discoloration.
- Include a popular commercial feed in experimental design to benchmark performance and also to use as a guideline to formulate a feed that will be successful with your ingredient.
- Feed formulas should be iso-nitrogenous and iso-lipidic to eliminate variability from a nutritional standpoint.
- Ingredient evaluation generally consists of incorporating an experimental ingredient into a basal or control diet, i.e., 30% ingredient + 70% control diet, etc.
- If inclusion levels of your ingredient are not known, the experiment can vary inclusion levels to determine the optimal level of inclusion. For example, some ingredients might be optimal from a nutrition standpoint, but may not work well with feed machinery at high inclusion levels.
- After feed is manufactured, it might not contain the nutritional profile intended because some processes such as heat extrusion might alter the profile. Plan on analyzing the nutritional composition of the manufactured feed samples by an independent laboratory once feed manufacture is complete for validation.