

# **HOT TOPIC**





### In focus

Alternative proteins, which are generally considered protein sources other than the traditional animal sources such as beef and chicken, are increasingly being utilized in both human and pet food. What are examples of alternative proteins, and why are they used in pet food?

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### What are alternative proteins?

Alternative proteins include proteins from edible insects (e.g., crickets, beetles, and black soldier fly larvae) and invasive fish species (e.g., Asian Carp), as well as cultured proteins (also known as manufactured, cultivated, or cell-based proteins), and plant protein sources that have not historically been used in pet food, e.g., fava beans.





#### Advancing Science for Pet Health

#### Why use alternative proteins in pet food?

Pet food manufacturers may use alternative proteins as an approach to sustainability. As ingredients in food for both humans and pets, animal proteins are becoming more limited in supply and carry a greater environmental footprint. As a result, alternative protein sources are being identified to minimize reliance on animal proteins to meet the nutritional needs of pets.

The use of alternative proteins also helps conserve land, water, and energy resources and reduce greenhouse gas emissions, thus decreasing the environmental impact of pet food.<sup>1</sup>

Some alternative proteins may be able to function as novel proteins in pet food. Novel protein diets may be helpful in cases of suspected food intolerances or food allergies to avoid feeding proteins the pet has previously been exposed to. However, feeding novel proteins will not prevent pets from developing a food allergy.<sup>3</sup>

**Approximately** 

2,000

different species of edible insects have been routinely consumed by people in various cultures around the world for many years. Recently, new markets for edible insects are emerging, especially in Europe and North America, for use as ingredients in human and pet food.<sup>2</sup>

## Can alternative proteins meet the nutritional needs of pets?

Pets require nutrients, such as protein and essential amino acids, not specific ingredients. In general, the source of the protein is not as important as protein digestibility and the specific amino acids that a food provides to the pet. Each protein ingredient provides a unique set of amino acids.

Individual protein ingredients may not contain all the essential amino acids in the right proportions to meet a pet's needs. However, combining complementary protein ingredients, which may come from alternative, traditional plant-based, and/or animal sources, ensures a complete diet provides all the essential amino acids a pet needs, in the correct balance and quantity.<sup>4</sup>



Alternative proteins can be utilized alone or in combination with traditional plant-based and/or animal-based proteins to provide complete and balanced pet foods.

Pet food ingredients—whether from alternative, traditional plant-based, or animal-based sources—are strictly regulated.<sup>5-7</sup> In addition, all ingredients in Purina pet foods must also meet the company's stringent safety and quality standards before they are included in the food.

#### References

- 1. Dobermann, D., Swift, J. A., & Field, L. M. (2017). Opportunities and hurdles of edible insects for food and feed. *Nutrition Bulletin*, 42, 293–308.
- 2. Henchion, M., Hayes, M., Mullen, A. M., Fenelon, M., & Tiwari, B. (2017). Future protein supply and demand: Strategies and factors influencing a sustainable equilibrium. *Foods*, 6(7), 53. doi: 10.3390/foods6070053
- 3. Mueller, R. S., Olivry, T., & Prélaud, P. (2016). Critically appraised topic on adverse food reactions of companion animals (2): Common food allergen sources in dogs and cats. *BMC Veterinary Research*, 12, 9. doi: 10.1186/s12917-016-0633-8
- 4. Laflamme, D. P., Izquierdo, O., Eirmann, L., & Binder, S. (2014). Myths and misperceptions about ingredients used in commercial pet foods. *Veterinary Clinics of North America: Small Animal Practice*, 44, 689–698. doi:10.1016/j.cvsm.2014.03.002
- 5. fediaf (The European Pet Food Industry). (2018, February). Guide to good practice for the safe manufacture of pet foods. https://fediaf.org/images/FEDIAF\_Safety\_ Guide\_February\_2018\_online.pdf
- 6. AAFCO, Inc. (2012). Ingredient standards. https://talkspetfood.aafco.org/ingredientstandards
- 7. FDA (2021, February 19). Pet food. https://www.fda.gov/animal-veterinary/animal-food-feeds/pet-food