

ALTERNATIVE PROTEINS *for* Pet Food



Global pet food segment is expected to be a **USD 113 Bn** industry by **2025**



* Same as animal protein source
** Protein content in grass

BLACK SOLDIER FLY



38 - 52%

Insect protein: Ofrieda use black soldier fly (BSF) insect to produce wet and dry pet food. Nestlé's – Purina blends BSF with fava beans and millet.



CELL-CULTURED PROTEIN



100%*

Cell-culture protein: Because, Animals cultured protein cookies produced from FBS-free media expected to be commercialized in early 2022

Because, Animals.

ALGAL PROTEIN



40 - 60%

Algal protein: Omni company uses micro-algae blended with plant proteins to produce dog food



PEA PROTEIN



40%

Plant-based protein: Ingredients such as oats, potato, pea, and barley are being blended to increase the protein and fiber content of pet food. V-planet uses plant-proteins in the alternative protein category



MICROBIAL PROTEIN



58%

Microbial protein: Bond Pet Food utilizes precision fermentation to produce chicken protein pet food

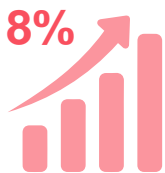


WASTE UPCYCLING

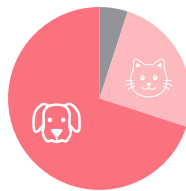


30%**

Waste upcycling: Grassa extracts protein concentrates from grass juice to provide a meal replacement for pets



Pet food products launched with **vegan & vegetarian claims** 2016 – 2021



Majority vegan products are geared towards **dogs**, followed by **cats**, followed by **other pets**

Alternative pet food segment

OPPORTUNITIES



High cost involved in using meat



Sub-standard, rejected meat used for pet food



Higher protein & fiber content in pet food using alternative sources

CHALLENGES

De-odorizing pet food that utilizes waste and insect protein



Lack of consumer awareness



Technologies such as cell-culturing have not reached commercial scalability

