



## CELL-CULTIVATED PRODUCTS IN PET FOOD

A NEW PROTEIN SOURCE FOR COMPLETE AND COMPLEMENTARY PET DIETS

The most important factor in feeding our pets is giving them a complete and balanced diet, appropriate for their species and life-stage. In this factsheet we discuss a novel protein source which can be used as a pet food ingredient.<sup>1</sup>

When used as a pet food ingredient, cell-cultivated products can contribute to nutritious and palatable products. While not yet available at scale, cell-cultivated products could eventually offer an alternative for pet owners who prefer to feed their pets animal proteins without the use of conventional livestock production.

### WHAT ARE CELL-CULTIVATED PRODUCTS AND HOW ARE THEY MADE?

Cell-cultivated products are a type of animal tissue that's grown from cells rather than obtained from conventionally farmed animals. Instead of feeding animals to grow and produce meat and other animal tissues, the nutrients are fed directly to the animal cells in a controlled environment, allowing them to multiply and grow independently.

The production of cell-cultivated products for pet food applications involves three key phases:

- 1 Sourcing:** The process begins by collecting cells from a living animal or a fertilized egg to start the production.
- 2 Expansion:** The cells are grown in a controlled sterile container filled with rich nutrients (known as media) which are typically from plant-based ingredients.
- 3 Harvesting:** Once the cells reach maturity, they are separated from the media using techniques like centrifugation - a process that spins the mixture at high speed to separate solid cells from the liquid. The result is a pâté-like product made of cultivated cells, which is then used in the final formulation of pet food.

### TYPES OF CELL-CULTIVATED PRODUCTS AND REGULATORY APPROVAL

In 2024, the UK became the first country worldwide to approve the use of a cultivated chicken product for pet food. It is likely that in the future cultivated animal tissue of a range of species will become available for use in pet food (e.g., pork, beef, fish, etc.). As with all pet food ingredients, any new material will require regulatory approval before being used in pet food.

Like all meat and animal by-products in pet food, cell-cultivated products that have received regulatory approval are listed on the **GB Register of Feed Materials**, and the production facilities are subject to Animal and Plant Health Agency (APHA) inspections in the same way that conventional meat manufacturing facilities are.

Cell-cultivated products, such as cultivated chicken, will be a new addition to an already diverse portfolio of highly sustainable protein ingredients that pet foods are made of.



<sup>1</sup> At the time this factsheet was published Meatly® Chicken was the only cell-cultivated product approved to be used in pet food in the UK.

Cell-cultivated products made from animal cells are sometimes called lab-grown meat, along with other terms like cultured, cultivated, cell-cultured, or cell-based. However, they are not currently classified as meat but are instead considered products of animal origin.<sup>2</sup>

### FORMAT OF PET FOODS WITH CELL-CULTIVATED INGREDIENTS

Cell-cultivated products for pet food should be considered as a category of raw ingredients, just as traditional meat, and fish. After the harvest, cell-cultivated products have a paté-like consistency and can be adapted to different processing methods for different types of products, including kibbles, wet pet food, fresh pet food and treats.

### NUTRITIONAL PROFILE

The nutritional profile of cell-cultivated products can vary significantly based on the type of cells used because different cell types contribute different sets of nutrients. The nutritional profile of each product will also be strongly influenced by the composition of the media, as the nutrients fed to the cells determine their macro- and micro-nutrient composition. Macro nutrients like proteins and fats and micro-nutrients like vitamins and minerals.

This means that the nutrients in cell-cultivated products can be adjusted by changing what it's grown in. So, when talking about its nutrition, it's important to consider the specific type of cell-cultivated product being used. Based on publicly available data, which can be found in safety dossiers and scientific papers, cell-cultivated products have a nutritional profile, and an amino acid composition, similar to their conventionally produced counterparts, but with a slightly higher moisture content.

### ENVIRONMENTAL BENEFITS

Although further research is needed, preliminary studies suggest that large-scale cell-cultivated production could potentially reduce environmental impacts, including lower greenhouse gas emissions and reduced land usage, compared to some conventional livestock productions such as cattle farming.<sup>3</sup>

**As the demand for dietary proteins continues to grow, along with the increasing pressure on environmental resources, innovative products such as cell-cultivated products and other novel proteins are timely and highly anticipated.**

Although research is currently limited, some evidence suggests that the sterile, antibiotic-free production of cell-cultivated products may offer public health benefits, including a reduced risk of antimicrobial resistance.<sup>4</sup>

### CONSUMER ATTITUDE AND ACCEPTANCE LEVEL

According to Oven et al. (2022), 81% of UK respondents who were willing to eat cell-cultivated products themselves would also feed them to their pets. Among those unwilling to consume cell-cultivated products, 56% of vegans and vegetarians were open to feeding them to their pets, whereas only 10% of meat-eaters would do the same. However, more research is needed to understand pet owners' perceptions fully, as many seek more information about the safety, sustainability, and benefits of cell-cultivated products in pet food.<sup>5</sup>



### You may also be interested in the following factsheets from UK Pet Food:

- Ingredients Insight: Animal Proteins in Pet Food
- Insect-based Ingredients in Pet Food
- What Are Animal By-Products?

All UK Pet Food's Educational Factsheets and Posters are available on our [website](#)



<sup>2</sup> Food Standards Agency (2024) Cell-cultivated products, November. Available at: <https://www.food.gov.uk/business-guidance/cell-cultivated-products>

<sup>3</sup> Sinke, P., Swartz, E., Sanctorem, H., Van Der Giesen, C. & Odegard, I. (2023) 'Ex-ante life cycle assessment of commercial-scale cultivated meat production in 2030', *Int J Life Cycle Assess*, 28(3), pp. 234-254. <https://link.springer.com/article/10.1007/s11367-022-02128-8>

<sup>4</sup> Stefanutti, C. (2024) 'A new protein source for pet food: cultivated meat', *Companion Animal*. <https://www.magonlinelibrary.com/doi/abs/10.12968/coan.2024.0013>

<sup>5</sup> Oven, A., Yoxon, B. & Milburn, J. (2022) 'Investigating the market for cultivated meat as pet food: A survey analysis'. <https://pmc.ncbi.nlm.nih.gov/articles/PMC9803157/#:~:text=Though%20not%20all%20our%20respondents,to%20safety%20and%20nutritional%20completeness>