Sufficient animal protein for pet food - or do we need alternatives in the future?

Paul McCartney lends his voice to the "Meat Free Monday" campaign. Another movement calls on an even more famous person: "Pope Francis offered $1 million to go vegan for Lent". The charity "Veganuary" is inspiring people to try veganism for January or even throughout the rest of the year. It is claimed that producing 1 kg of rice requires about 3,500 litres of water, 1 kg of beef needs approximately 15,000 litres and also 7 kilos of grain.

Pollotarians, pescatarians, flexitarians, vegetarians or vegans: For mostly ethical, environmental or animal welfare reasons people are abstaining from consuming some or all meat. It is estimated that around 22% of the global population follows a vegetarian diet – a slightly growing tendency.

In terms of the pet food industry, there is basically no animal raised for pet food production: The industry uses by-products – materials from animals which are inspected by vets as fit for human consumption, but which are either not used at all, or used sparingly, by the human food industry.

Pet food manufacturers add value to these materials by using them in the production of pet food, thereby reducing the impact on food waste, the availability of commodities and minimising the carbon footprint of producing foods specifically for use in pet food. However, if people eat less meat, this can in turn mean less surplus from abattoirs for pet food production.

Annual statistics for the European meat consumption per capita show, for the moment, no reduction in people's appetite for meat: In 2010, the average European consumed 63,3 kg of meat per annum, the forecast for 2020 stands at 65,7 kg. – Looking beyond Europe, the growing middle-class populations in countries like China, India, Russia or also in the African countries, meat consumption continues to grow as is the case when people have more disposable income.

Should the pet food industry therefore just relax and not worry about supply of animal protein sources and not look for alternatives? – Short to medium term no worry, long-term perhaps more.

The global human population is expected to grow from now 7.5 bn to 8.5 bn in 2030 and to 10 bn in 2050. The current use of arable land for cultivating crops to feed farm animals is expected to be used in future for growing food for humans. Long-term, there will be less meat and thus less by-products for the pet food industry.

So, what will be the alternatives? Vegetarian pet food might work for dogs, but not for cats as obligatory carnivores.

Insect protein is very much talked about with a protein content between 40 and 75% depending on the species and what they were fed. But there are limitations, not only due to the "yuck" factor, but also because high energy consumption for heating of insect cultures.

"Cultured meat" or "in vitro meat" hit the news in 2013 when the first €270.000,-- lab-grown beef burger was presented. The Dutch company behind this has since announced that by 2021 large-scale production of such in-vitro minced meat will take off at an expected price of less than one Euro per burger. And the protein content is identical compared to "real" beef. Research is also underway and promising for in vitro poultry and fish.

Protein-rich meat alternatives are a long-standing staple in Asian diets, for instance soy-based tofu or seitan from wheat gluten. In Europe the first myco-protein (protein derived from fungi) was developed and is commercialised for human food.

Last not least, and with a protein content nearly twice as much as beef: Algae protein has great potential, grows ten times faster than terrestrial plants - and absorbs CO2 as an additional sustainability effect.

Ongoing and future research and innovation will thus provide alternative protein sources for humans and pets – industry will “only” have the challenge to transform these into palatable and nutritious pet foods.

As the squeeze on resources and food availability continues, the pet food industry is committed to looking at further solutions to minimise the environmental impact and sustainable use of resources in the manufacturing of pet food.

***