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Bug-based chicken burgers in supermarkets soon

Researchers are preparing to conduct field trials of house fly larvae as an alternative to animal feed made of cereals and corn, and it means bug-based burgers, bacon and chicken breast could be on supermarket shelves soon.

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House flies can convert manure into protein faster than most other insects, and they're already present all over the world. That's why researchers at the EU-funded PROteINSECT project are working out how to grow and treat them so they can be safely fed to pigs and poultry.

Researchers have already worked out how best to prepare the larvae - they grow them in a tray filled with warm manure for a few days and then put them in hot water. The next stage will be to try feeding them to pigs and chickens to see how efficiently the animals fatten up, and trials are planned in the UK and Belgium for next year.

According to a 2013 report by the Food and Agriculture Organization (FAO) of the United Nations, insects are a nutritious and environmentally friendly food. They could provide a readily available source of minerals and vitamins, and feeding insects to pigs and poultry would save valuable farmland which is now being used to grow animal feed.

Current meat production techniques, including resource-intensive livestock production, are responsible for around 14.5 % of global greenhouse gas emissions, according to a second FAO report.

Developing technology to rear chickens, cows and pigs more sustainably and efficiently is a major focus of Horizon 2020, the EU's research funding programme which runs from 2014 until 2020.

'We have a growing global population, people are eating more and more meat, therefore we need to produce protein more sustainably. With three billion extra mouths to feed by 2050, the need to improve the efficient

use of land for protein production and the effective utilisation of waste materials has never been greater,' said Dr Elaine Fitches, from the UK's Food and Environment Research Agency (FERA), who coordinates the PROteINSECT project.

Insects are already used to feed animals in Africa and China, and the project hopes to generate data that can be used by policymakers to decide whether to allow farmers to use fly larvae as a feed in the EU.

At the moment EU rules say only farmed fish can be fed insects, however, the PROteINSECT researchers say politicians could change the rules to include pigs and chickens as soon as next year, when they may have early results from the field trials.

And a survey of European citizens by the project suggests that more than 75 % of people would accept to eat chicken, fish or pork from animals fed on an insect-based diet, according to preliminary results.

Insects eaten by humans

Insects do not only provide nutritious feed for animals, they are also seen as a tasty snack by billions of people. Global estimates suggest up to 2 000 insect species are regularly consumed as human food, particularly in Australasia, Latin America and Southeast Asia. The most commonly consumed insects are bees, beetles, caterpillars and locusts. Red maguey worms, for example, are deep-fried and eaten with tortillas in Mexico.

In the Republic of Niger, grasshoppers are considered a delicacy and are bought from food stalls at the sides of roads. In Japan, thousands of people gather to eat wasp larvae at the annual Hebo festival.

In the Central African Republic, caterpillars are an important part of people's diet. In some tribes in the region, the average person eats over 40 caterpillars per day during the rainy season.

Insects such as roasted crickets, fried locusts and grasshoppers dipped in chocolate are available from specialist suppliers in Europe too. Several restaurants have insects on their menus, and we sometimes even eat insects without realising it: in the EU, the red food colouring labelled E120 (carmine) is made from an insect called cochineal.

More info

PROteINSECT

Video from the PROteINSECT project