

Play with you mind: Save the planet

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1 Introduction

Climate change and global warming are expressions that many people are aware of nowadays. The planet is about to go through big changes and this is primarily the result of the human lifestyle. To slow down the process, we are constantly told by the media to minimize the use of fossil fuels because it is the biggest reason of the environmental instability. Although this is true, also other things cause climate change - such as livestock. This problem can be reduced by changing our diet from eating fish and meat to eating insects. In comparison to the livestock industry, the production of insects is very environmentally friendly. A big problem about this approach is that most people finds the idea of eating insects disgusting.

2 Why insects

2.1 Health benefits

Eating insects is not only good for the planet, but it is also good for your body. Insects provide high-quality proteins and nutrients comparable with the proteins and nutrients from fish and meat. For example:

- 1 kg of termites provides roughly 350g of protein, whereas the same amount of beef contains 320g of protein.
- Caterpillars contain 280g of protein per 1 kg. That is 20g more than salmon, 30g more than pork, and 263g more than tofu.

Insects are also good food supplements for undernourished children, because most insect species are high in fatty acids. They are also high in fibre and micronutrients such as copper, iron, magnesium, manganese, phosphorous, selenium and zinc. A benefit of insects compared to other animals is that they have a low risk of transmitting diseases to humans (zoonotic diseases) such as bird flu (H1N1) and mad cow disease (BSE).

2.2 Livelihood and social benefits

A social benefit of eating insects is the production. This could be a good opportunity for poor members of society to find income. Insects can be gathered in the wild, cultivated, processed and then sold. The insect harvesting and farming can provide entrepreneurship opportunities. The insects can be processed for food and feed pretty easily - some species can be consumed whole and others can be ground into meals.

2.3 Environmental benefits

Substitution of other protein sources with insects has many environmental benefits. Because insects are cold-blooded, they have a high feed conversion efficiency, which means that they need a low amount of food to produce a 1 kg increase in weight. This feed-to-meat conversion rate varies between the species and the production practice used, but nonetheless insects are extremely efficient. On average they require only 2 kg of feed to gain 1 kg of body mass, whereas cattle requires 8 kg of feed to do the same.

More feed means more food production, which leads to emission of greenhouse gasses. Feeding insects instead of conventional livestock could therefore also contribute to a reduction in greenhouse gas emission. Insects can feed on bio-waste, such as food and human waste, compost and waste from other animals. They can transform this into protein of high quality that also can be

used to feed other animals. Insects can therefore be seen as a self-sustainable food source, which can be an effective link in the food and waste cycle and help solving a worldwide increasing waste problem.

The level of greenhouse gasses emitted directly by insects is likely to be lower than that of conventional livestock. For example, pigs emits 10-100 times more greenhouse gasses per kg of body weight than mealworms.

Insects use significantly less water than conventional livestock. For example are mealworms more drought-resistant than cattle. Minimum water consumption is a big environmental benefit due to scarcity of clean water and emissions from production hereof and a big advantage in areas with drought.

Another big issue with conventional livestock farming is the amount of land used, both for the actual livestock and for growing their food. The land used to farm insects is a very small area compared to conventional livestock farming due to the size of the animals and the differences in their required living standards.

3 How are they produced?

Edible insects are at present produced on insect farms. The farms are usually very simple barns filled with insects. The insects are bred in boxes made of cardboard with several walls and aisles for the insects to go through. A whole batch is kept in the same box and in this way it is easy to know when they are full grown. The boxes also make sure that the sanitation is high in the farms. The insects can feed from any kind of nourishment. Thereby, food wastes can be used to feed the insects which contributes even more to environmental benefits. It is also a contribution to that insect breeding is very cheap.

When a batch of insects are fully grown they are put on a baking sheet and are roasted in an oven until they are completely dry. After they are dried they can either be used as a provision directly or be milled into flour.

4 How to eat them

There are many ways of eating insects. One way is to use them full-sized in cooking and implement them in any kinds of dishes. Different insects can be used for different flavours in different dishes to attain desired taste. Another way is by use insect flour as an ingredient in cookies, pasta, protein bars and other pastries. Currently, a new insect food is developed in terms of “minced insect”. This product can be used as a substitute for minced meat in for example hamburgers, meatballs and lasagna. Finally insects can be eaten whole as a snack with some nice flavouring.

5 Where to find it

Presently, insects are eaten in more or less the whole world, except from Europe. This is because edible insects are not legal to sell as food in EU. The reason for its legalization is because it is not yet known how diseases are spread through insects. However, investigations are on the way and it is predicted that there is no hazard. Furthermore, insects are ingredients in a lot of food products today, so the law decides whether insect as food products should be legal.

The easiest way to buy sanitary edible insects today is by shipping it from United Kingdom or the United States. In US there are many retailers for whole crickets, cricket flour and products containing insects such as cookies and insect bars. The best place to go to find dishes including insects would be China.

In order to change the climate change, everyone needs to do their part. Eating insect products could be a solution for one part. Would you dare trying something new to contribute to solving climate change? Play with your mind and save the planet.