

Large-scale edible insect farming needed to ensure global food security

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The large-scale production of edible insects is unavoidable in order to continue feeding the ever-increasing global population and providing them with enough animal protein. Insect farming can be compared with mini livestock farming. It is environmentally friendly, does not require much land and produces high-quality nutrients. Furthermore, as a new sector of the food industry, it will provide a livelihood for large groups

of people. This is the basic message contained in the book *Edible insects: future prospects for food and feed security*, written by researchers at Wageningen University and the Food and Agriculture Organisation of the UN (FAO). The book will be launched in Rome the 13th of May.

In their book, the authors provide an overview of the latest and most complete data from literature and experts. At least two billion people currently consume insects on a regular basis. More than 1,900 edible [insect species](#) have been identified, including beetles (31 percent), [caterpillars](#) (18 percent) and bees, wasps and ants (14 percent).

Research has shown that insects are highly nutritious, healthy and full of proteins, and many species contain as many unsaturated fatty acids (such as omega 3 and 6) as fish. The environmental benefits of insect farming are manifold: insects are much more efficient at converting feed into edible body weight than chickens, pigs or cattle. Furthermore, they emit 50 times fewer emissions than traditional livestock and ten times less ammonia. In addition, there is less risk of animal diseases being transmitted to humans.

Whether or not we eat insects ('entomophagy') is largely dictated by culture and religion. It is part of the staple diet in many regions. Here in the West, we tend to brand such behaviour as 'disgusting' and 'primitive'. The authors of the book think that a lot of effort will have to go into devising [communication strategies](#) to promote the consumption of insects. Non-Western consumers will have to reinstate insects as a useful source of nutrition rather than copying Western eating habits. New processing methods must be developed to overcome the resistance on the part of Western consumers. These may include grinding the insects or extracting their proteins so that insects cannot be recognised as such anymore.

The scientists concerned envisage a lot of hard work before large-scale insect farming becomes a reality. There will be numerous challenges regarding industrial automated farming methods, processing and preserving techniques, conducive regulations and legislation, and gastronomy.

Despite the existing wealth of knowledge on the advantages of producing and eating insects, the authors want to see prompt, simultaneous answers to four serious questions. More documentation about the nutritional value of insects is needed in order to promote them as a healthy alternative. The effects on the environment must be clarified in order to compare this form of farming with conventional livestock production. There needs to be more certainty about the social-economic benefits of insect farming, particularly with regard to food security in the poorest sections of the population. And finally, a clear and comprehensive system of international regulations must be devised to smooth the path for investments to encourage this new branch of the industry and enable international trade in the sector to develop to its full potential.

More information: A. van Huis, J. Van Itterbeeck, H. Klunder, E. Mertens, A. Halloran, G. Muir & P. Vantomme, 2013. *Edible insects: future prospects for food and feed security*, FAO Forestry Paper 171.

Provided by Wageningen University

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