

SCIENCE - MAY 9, 2018

Coming soon: water lentil burgers

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Would you like a duckweed burger? It is not yet reality, but such a duckweed-based veggie burger will be coming soon. Thanks to Wageningen.



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But this new vegetarian snack will not be called a *duckweed burger*, Jurriaan Mes quickly adds. 'That reminds people too much of ponds.' And that is not something the food and health researcher at Wageningen Food & Biobased Research just says on a whim: it has been studied already. 'Consumer research has shown that the name *duckweed* is not very favourable, and that it is better if we call the plant by its other name: water lentil.'

Lingewaard

A veggie burger based on the protein in duckweed has not been produced yet. But that is the aim of the project that Mes, his colleague Ingrid van der Meer (Wageningen Plant Research), several companies and the municipality of Lingewaard

are currently working on. With financial support from the European Union (European Regional Development Fund), the consortium is working on making duckweed the new source of protein.

Most people know duckweed from the green stuff that fills ditches and ponds. But this rampant plant also has a very different side to it, Mes elaborates. 'The plant has a very high protein content. And as it grows so quickly – it only requires a layer of water and some sunlight – it is very interesting as a source of protein.' So interesting, in fact, that WUR has already spent three years researching duckweed.

“ The plant is stronger than we think. Our enzymes seem to have trouble getting to all the proteins. ”

Jurriaan Mes, Wageningen Food & Biobased Research

This research is mainly aimed at getting water lentils and the proteins extracted from it accepted for human consumption. But that has yet to be achieved. Mes and his colleagues are working on putting together a Novel Food Dossier, which should pave the way to supermarket shelves. Another important aspect is the required additional research into the extent to which humans are able to digest the plant. And its digestion turns out to be rather difficult. 'The plant is stronger than we think', Mes explains. 'Our enzymes seem to have trouble getting to all the proteins.'



Description of the water lentil in the Cruydt book by Rembert Dodoens dated 1644

Besides the plant's direct consumption, the project also focuses on the extraction of proteins from it. The company responsible for this is [Biorefinery Solutions](#), which is based in Groenlo. The development of new products is on the shoulders of the [Bobeldijk Food Group](#) (Dutch website) from Deventer – known for their vegafit meat substitutes.

But it all begins with the growing process. And that is where the municipality of Lingewaard comes into play. The municipality sees the production of duckweed as a great opportunity to deal with the vacant greenhouses around the city. The first plants will leave Wageningen this week and make their way to a participating grower in Lingewaard. The species involved is the *Lemna minor*. The chemical analyses and the food experiments are taking place in Wageningen.

Cook book

According to Mes, a follow-up to the digestion experiment will soon start. In that experiment, the researchers will analyse the long-term (eleven days) daily consumption of water lentils. Because even if digesting it might be difficult, the plant is certainly edible. Students of VHL Leeuwarden already created a cook book for it in 2015 entitled '*Waterlinzen, heerlijk en*