

From food waste to food delicacies

December 8 2015, by Janne Hansen



Scientists are transforming crooked carrots and other types of fruit and veggies

that often go to waste to new and exciting food products. Photo: Janne Hansen

How do you like your fruit and vegetables - in the shape of crystals, syrup, powder or crisps? A new treatment method for waste products from the production of fruit and vegetables can turn some or all of the products that we usually throw out into delicious and exciting food products.

Scientists from Aarhus University's Department of Food Science are participating in a [project](#) that will utilise a special drying technique to convert such products into valuable [food](#) ingredients and [new products](#) and thus reduce [food waste](#).

Good food is thrown out

In Denmark fruit and vegetable producers throw out around 100,000 tonnes of edible food each year. This corresponds to a socio-economic loss of approximately 311 million DKK per year, not to mention that the futile production of food represents an unnecessary burden on the climate.

A significant part of the problem is that consumers put exacting demands on a product's colour, shape and freshness. We tend to reject fruits and vegetables that are not perfect in these respects. This means that fruit and vegetable growers produce more than can be eaten, as the imperfect ones are discarded.

Instead of throwing all these nutrient-rich food products on the rubbish pile just because they are crooked, damaged, too small or too strange, they can be used to make new kinds of healthy products. It is here that the project WasteTaste comes into the picture.

The imperfect can also be used

Through the use of an energy-efficient vacuum-drying technique the project will develop, optimise and produce brand-new high-quality products. In vacuum-drying the boiling point is reduced in order to dry at a lower temperature. This means that the process is well suited to drying heat-sensitive items such as fruit and vegetables that will then retain significantly more of their flavour, colour and nutritional value. Vacuum-drying is also a relatively energy-efficient way of drying compared with, for example, freeze-drying.

The final results can be anything from a mash, puree or syrup to crystals and crispy products. The variation depends on the degree of drying and the raw materials used, such as crooked carrots or large beetroots that consumers hesitate to buy.

Professor Derek V. Byrne, who is coordinating Aarhus University's part of the project, which focuses on the sensory properties of the new WasteTaste products, says:

"The project is the perfect combination of food waste and a new use of technology whereby high-value products are created with a variety of applications in different industries, and where the products have a good taste and the nutritional value of the original produce is preserved."

The new products can open up new markets for the food industry. The project partners therefore include actors from the food industry so that the [products](#) can be tested for, among other things, their gastronomic value, their appeal to ordinary consumers and their potential as a healthy food.

Partners in the three-year WasteTaste project include Aarhus University, University of Copenhagen, DLG, restaurant Tivolihallen, health food

manufacturer Panacea ApS, chocolate and candy manufacturer Toms Gruppen A/S and the manufacturer of the drying facility WTT A/S (project leaders). The project has been granted 6.2 million DKK from the Green Development and Demonstration Programme (GUDP) under the Ministry of Environment and Food.

Provided by Aarhus University

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