

# Frozen-fresh-preserved food waste generation



Impact of different methods of food  
preservation on food waste generation  
in Dutch consumer households



**WAGENINGEN**  
UNIVERSITY & RESEARCH

This pilot is part of Topsector Agri & Food project CARVE (TKI-AF-14318)



*'We believe that this study demonstrates freezing food, as a means of preservation, has a key role to play in the fight against food waste'*

*Oliver Spring, Group Corporate Social Responsibility Project Manager, Nomad Foods Europe*

## The question

**'Does the specific type of preservation have an impact on the amount of food waste in Dutch households?'**

In Europe, households account for about 50% of the food waste in the distribution chain. Mostly, amounts and general composition of food waste are studied at a household level. Little is known about product characteristics such as type of preservation that might drive consumers' food waste generation. The Waste & Resources Action Programme recommends using the freezer in order to decrease food waste levels. However, actual data that would allow this to be measured is scarce.

## The approach

An extended survey on self-reported food waste among consumers from a representative group of over 500 Dutch households was conducted. This involved finding general information on household routines, e.g. stock management. Next, the possible impacts of different methods of preservation at the point of purchase (frozen, fresh or preserved) on food waste generation were explored. For specific food products, households indicated how often they consumed a product annually, how often they disposed of it and the habitual discarded amounts involved.

## The results

For six out of seven vegetables, plus potato products and berry fruit, the volumes discarded per consumption event were the smallest for frozen. For peas & carrots and unbattered fish, the quantities in each purchase form going to the waste bin were approximately the same. In the case of ready-to-eat meals, a greater proportion of the frozen version was discarded. It was observed that participants were more likely to store fresh products in the fridge to consume at a later stage, compared to their frozen or preserved equivalents. When giving a reason for discarding food, often "forget about products" in the fridge or freezer was indicated. Households would possibly benefit from support in managing their food stocks, particularly for foods stored in the freezer because of the extended shelf life.

The results indicate the potential to reduce the amount of household food waste by encouraging Dutch consumers to use certain foods more frequently in frozen form. However, before this approach can be scaled to population level, a more detailed understanding of the underlying behavioural causes with regard to food provisioning and handling is required.

## CARVE

The project CARVE (Across supply Chain Action programme Reduction of food waste, improved Valorisation and resource Efficiency) is a collaboration between the Alliance Sustainability Food and Wageningen Food & Biobased Research that aims to reduce food waste in the agri-food chain. Over four years, this programme will organise pilot projects within companies in the food chain, providing them with tools and decision models. A toolbox will be developed based on the pilot projects that will allow companies to integrate the prevention and reduction of food waste as an objective in their operations, organisation and supply chain.

## Duration and budget

One year; €57,000

## Companies

Nomad Foods Europe

More information can be found at:

<http://www.nowastennetwork.nl/carve/>

See the scientific paper: *Fresh, frozen, or ambient food equivalents and their impact on food waste generation in Dutch households*, Anke M. Janssen, Mariska A. Nijenhuis-de Vries, Eric P.J. Boer, Stefanie Kremer. <http://dx.doi.org/10.1016/j.wasman.2017.05.010>

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