FOOD WASTE IS BEING TACKLED

Past its sell-by

The Dutch throw out 4.4 billion euros' worth of food every year. The government wants to cut this figure by 20 percent by 2015. Should be possible, say Wageningen experts. There is a lot to be gained through some quite simple measures.

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Eating food that is past its sell-by date doesn't sound an especially appealing hobby. And yet the 'Past its sell-by Dining Club' in Amsterdam has served up some delicious meals over the past six month, says initiator Willem Velthoven of cultural organization Mediamatic. ´Loads of food items that are past their date are still perfectly edible. We throw them out quite unnecessarily.´

Last summer, Velthoven and his colleagues set out to demonstrate this to the general public. They collected ingredients that were about to be binned from shops in the neighbourhood and invited a chef to concoct a free meal with them, together with anyone interested. 'You might not expect this, but the shopkeepers were happy to help us. They liked the idea that we were doing something with food that it often hurts them to have to throw out', explains Velthoven.

The 'Past its sell-by Diners' Club' was a success. Instead of one or two meals over the summer, there were 20 well-attended dinners running right up until winter set in. 'It was a real eye-opener for the guests, who were welcome to bring in products from home that were past their sell-by date. Many of them had no idea you could bake pancakes with sour milk, or that flour that is past its sell-by date is perfectly usable as long as you can't see any wildlife crawling around in it. One man brought in some chilli sauce made in 1981; it was still delicious.'

Needless food waste is bothering growing numbers of people. In Belgium, 'dumpster diver' Steven de Geyns received mass support from demonstrators in January, according to a report in Dutch newspaper de *Volkskrant*. He had been sentenced to six months in jail for fishing two bags of muffins out of a garbage container outside a supermarket. Theft, said the judge. But according to De Geyn's supporters, throwing out muffins is a waste of food. 'Where is your conscience?' they chanted in court.

AN ACCURATE PICTURE

Astonishing amounts of food go uneaten every year. In the Netherlands alone, about 4.4 billion euros' worth, according to expert estimates. Farmers, trade organizations, food producers, supermarkets and caterers waste about 2 billion euros' worth between them, and consumers account for the other 2.4 billion. 'But these are very rough estimates', says Toine Timmermans, programme manager at Wageningen UR Food & Biobased Research. This institute is involved in several Wageningen research projects that are tackling food waste. 'In the coming years we want to get a more accurate picture of what and how much gets thrown out in each sector. But one thing is certain: an awful lot of food is wasted.'

It is not wasted wilfully, however. Supermarkets want to guarantee quality and do not take any risks in this respect. They remove products that are approaching their sell-by dates from the shelves, even if they are still perfectly edible (see text box). The same goes for fruit and veg. Wilting lettuce or bruised apples are not offered for sale. 'The average supermarket throws food worth between 500 and 1,000 euros away every week, which is 1 >


chocolade
vla
Goede morgen!
Fruitoma

to 2 percent of their turnover', says Timmermans.
It is the same story in health care institutions and in the catering branch. In fact, they often discard at least 5 and up to 60 percent of the food they buy. It is often hard to estimate what the demand will be for their meals, and they have to meet very strict regulations. Since 2007, they are not allowed to display their products for more than two hours. 'Since then, levels of food waste have shot up', says Timmermans.
A lot of food gets wasted before it even reaches the supermarket, too. In fact, this accounts for between 5 and 10 percent of the total volume, says Timmermans. Take curved cucumbers or forked carrots, for example: most of them never reach the supermarket or greengrocer's shelves. And any food that does not meet norms for pesticide residues or for quality, thanks to a faulty machine in the factory, gets pulped.

'One thing is certain: an awful lot of food is wasted'

But consumers waste the most food. About 10 percent of the food they buy goes uneaten. This amounts to about 40 kilos or 145 euros per person per year. There are several reasons for this, according to numerous studies by Dutch organizations including the ministry of Economic Affairs, Agriculture & Innovation (EL&I), the Nutrition Centre and environmental organization *Milieu Centraal*. Consumers do not plan properly, buy and cook too much, or needlessly throw out foods which are past their sell-by date. Packaging sizes are also often too large for

FOOD WASTE IN EUROPE

Total amount of food produced for human consumption per year

654 million tons

Total amount of food wasted per year

205 million tons

Waste by consumer: **34%**

Waste during production, harvesting, processing and trade: **66%**



small households and the habit of using up yesterday's leftovers has largely died out. Young people tend to waste more than older people, and the employed more than the unemployed or retired. The most striking research finding, however, is that people are almost universally convinced that they do not waste very much food. Their garbage bins tell a different story.

The big question is, though: how do we prevent this – rarely deliberate and largely unconscious – waste of good food? The ministry of EL&I aims to get us to reduce food waste by about 20 percent of 2009 levels by 2015. Europe, it was announced early in January, aims at a 50 percent cut by 2025. Are these feasible objectives? Timmermans, at Food & Biobased Research, thinks they are. By adjusting the regulations and expanding people's knowledge about the food they buy, you could reduce food waste considerably, concluded Timmermans together with other staff of Food & Biobased Research and the agricultural economics institute LEI, also part of Wageningen UR. In their report *Reducing Food Waste*, which came out in November, they talk of the lack of clarity about what is allowed after the use-by date has expired. This causes companies to take products off the shelves unnecessarily.

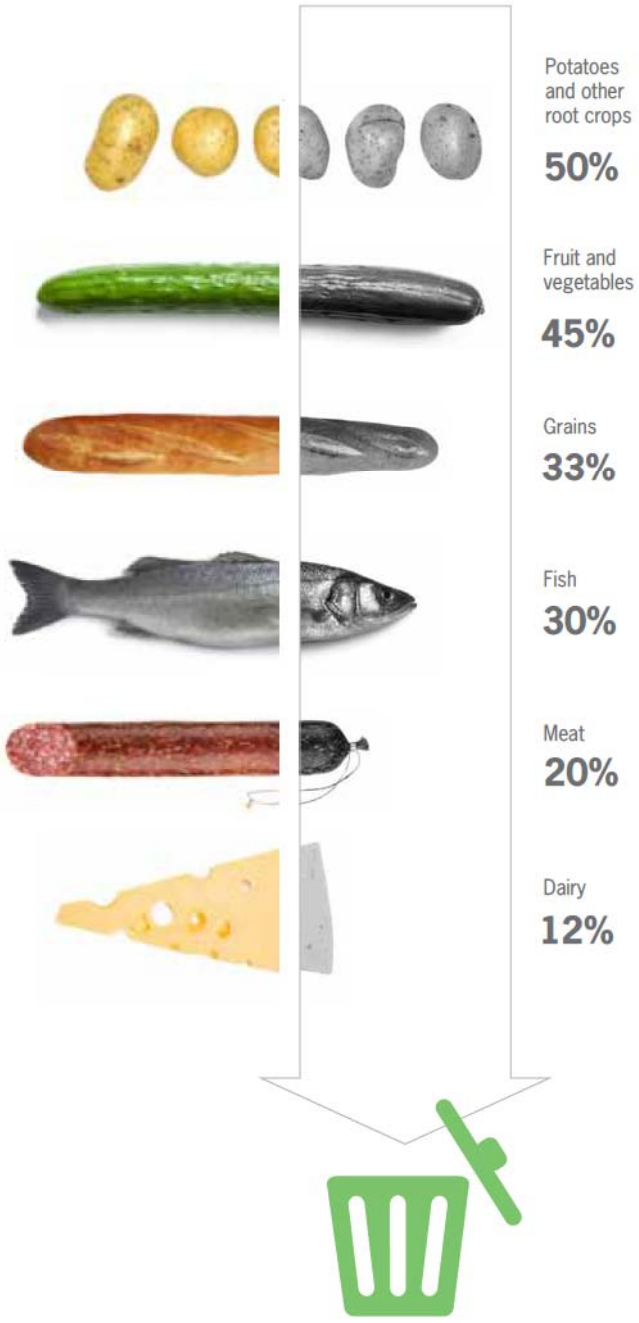
Regulations on displaying freshly made foods also need adjusting, say the authors of the report. The rule that forbids catering outlets to display their wares for more than two hours leads to waste. Some companies are granted an exemption because they can guarantee that their products are still of good quality after two hours. This factor in primarily at work in the catering branch, explains Timmermans. 'Big companies such as Sodexo and Compass are allowed to ask for exemptions for specific products. For this they need to provide evidence from research, which can be pretty expensive, not least because the recipe for particular products can vary.' So the report suggests that the government should investigate whether more companies could obtain exemptions.

TAKING UP THE CUDGELS

The catering sector has also taken up the cudgels against food waste itself recently, through the branch association Veneca. Veneca asked Food & Biobased Research to analyse current levels of food waste and identify the underlying causes. The first provisional findings are that dairy products, soup, bread and pre-cut salads are the main items that land in the bin. Secondly, the sector could reduce this waste significantly by making simple changes. 'For example, by not making a fresh pan of soup a quarter of an hour before closing time. That may be providing good service for the last customer, but it is a waste of >

WASTE OF PERISHABLE PRODUCTS

Total waste per food category, in percentage of amount produced (Europe)



soup', says Timmermans. In the course of the coming year, Food + Biobased Research will be exploring other easy ways of cutting down waste in the catering branch. Health care institutions are equally keen to find ways of preventing the food they buy from ending up in the bin. The Maxima Medical Centre (MMC) in Brabant launched a pilot scheme called Meals on Wheels: the hospital took on a caterer that brought meals to each patient personally. Their nutrition assistants serve two full meals, and patients can say exactly what they want on their plates, and how much.

This makes a big difference to the amount thrown out. The MMC used to throw out 40 to 50 percent of the food served; with Meals on Wheels this has been cut to just 2 percent, says Joost Snels of Food & Biobased Research, who is analysing the project's impact for the hospital. This saves the MMC 400,000 euros per year. 'Patients no longer have to decide what they want to eat days or hours in advance, as is so often the case. What tends to happen then is that by the time the food comes, they don't fancy what they ordered and leave half of it on their plates', says Snels. The success of this concept has not gone unnoticed. Last year, Meals on Wheels won the No Waste Award, a prize awarded by the ministry of EL&I for an innovative project to combat food waste.

'Someone brought some chilli sauce made in 1981; it was still delicious'

INVESTING

In the near future we can expect to see many more innovations that can help reduce food waste. Last year the Top Institute Food & Nutrition decided to invest six million euros in projects which will analyse the entire chain from the primary producers to the consumers and look for ways of making improvements, both by reducing waste and by adding value. In this regard, researchers look into the scope for the industry to convert raw materials into food more efficiently and to make good use of by-products. The branch organizations of the supermarkets (the CBL) and of the food industry (the FNLI) are funding this research jointly with the government, Wageningen UR, NIZO food research and research organization TNO.

'To start off with, we are targeting meat, bread, vegetables and fruit. The products with which the biggest losses are made', says Timmermans, who coordinates this project. The top institute is putting PhD and post-doc researcher to work at all levels. From mathematicians who develop software to improve the matching of supply and demand between supermarkets and suppliers, to biochemists who use micro-organisms to find out whether they can determine the shelf life of fruit and vegetable at an early stage.

Elsewhere in Wageningen UR, work is going on to develop microchips that will be able to tell the consumer much more precisely how long a fresh product will stay fresh. Working together with Eindhoven Technical University, Philips and the Holst Centre, Wageningen is testing whether certain volatile substances released in the ripening process in fruit and vegetables or in the rotting process in fish or meat can be detected by a sensor in the packaging. Tiny van Boekel, professor of Product Design and Quality Management at Wageningen University, part of Wageningen UR, is involved in this project. 'So you would be able to see on this sensor whether the product is still fresh, and how long it will stay that way. Producers play it safe at the moment, to avoid being sued. They won't need to do that once they have these microchips.'

But this modern version of the sell-by date – which tells you far more about the condition of the product because it measures its actual quality rather than predicting it at the factory – is not yet ready to be rolled out in the supermarket. 'We first need to find out which volatile substances are suitable for this purpose, and what they tell us about the quality and shelf life of the product. I think that will take us another few years', says Van Boekel.

Given the number of initiatives, it should be possible to reduce food waste – from the farmer to the consumer – by 20 to 25 percent in the next few years, thinks Timmermans. The toughest task is to reduce consumer waste, which at 2.4 billion euros per year accounts for more than half the total amount. 'It is quite difficult to influence consumer behaviour. You see that with health campaigns, which often just don't make an impact.'

But there are some positive examples out there. Ten years ago, Great Britain launched a major national anti-waste campaign for which an organization called WRAP was set up. Together with about 400 organizations, including su-



BEST BEFORE?

Many people think they should discard any products past their 'sell by' date because they are bound to have gone mouldy or be harbouring nasty bacteria. But this is a misunderstanding. Very many products can safely be consumed after the date on the packaging. In some cases, they can be eaten months or even years after the date. The important thing is to understand the difference between a use-by date and a sell-by or best-before date. It is often advisable to take a use-by date seriously, as this date is used on perishable products such as meat, fish and dairy produce. A 'best before' date is given on less perishable goods and says more about quality, and less about possible health dangers. The manufacturer guarantees the taste and quality up until the date mentioned, but it is not a problem for the consumer to eat it after that date. According to the Netherlands Food and Consumer Product Safety Authority, salt, sugar, dried pasta, coffee, tea, rice, syrups, sweets and conserves in tins or jars (fruit, vegetables, soups, meat, fish, evaporated milk and jams) are safe to use for one year after their expiry date. Products such as flour, muesli, cornflakes, spreads such as peanut butter or chocolate sprinkles, oil, mayonnaise and ketchup are safe for at least two months beyond the date.

permarkets and food producers, WRAP put out the message that it is a shame to throw out food. With success, a recent evaluation shows. After five years of campaigns under the slogan, 'Love food, hate waste', British consumers are now chucking out 13 percent less food. One striking finding is that they are still spending the same amount of money on food. 'The British are probably now spending money on better quality products', suggests Timmermans.

But WRAP cost a lot of money too. The British government invested millions in this campaign. The Dutch government is not prepared to go that far. For the time being, the Dutch Nutrition Centre and *Milieu Centraal* have to be satisfied with trying to raise consumer awareness with relatively small-scale campaigns such as one currently running, called 'Food is for eating' (*www.etenisomopteeten.nl*). The 'past its sell-by diners club' (*www.overdatum.org*) in Amsterdam has stopped for now. 'We might start up again on another footing in a couple of months' time, but we don't know yet', says Veldhoven of *Mediamatic*. 'But we do urge others to follow suit and start their own 'past its sell-by clubs'. Really, once you take the plunge and go and talk to a shopkeeper, it is remarkably simple. You are usually welcomed with open arms.' ■