



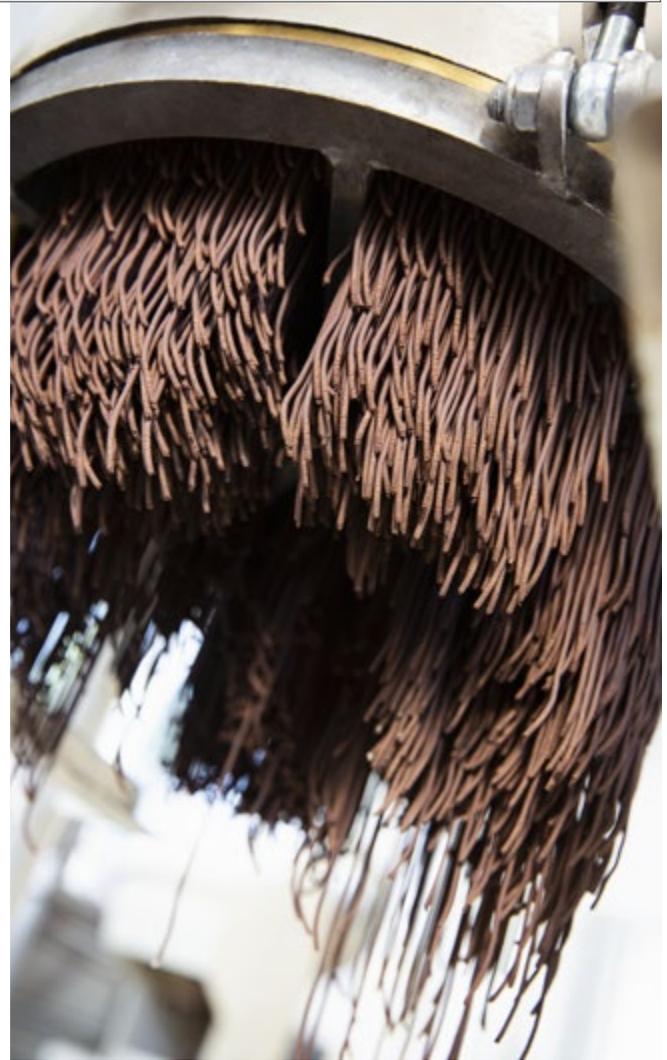
Producing chocolate sprinkles at Delicia in Tilburg.

Less sugar, but nice and

The producers of cookies, sweets and other confectionery could do more to reduce the amount of sugar in their products. Twenty companies received advice on this from Wageningen Food & Biobased Research. 'Now we can put 20 to 30 per cent less sugar in our chocolate sprinkles'.

TEXT RENÉ DIDDE PHOTOGRAPHY NICOLE MINNEBOO

Look, here we are pressing the cocoa solids through those little holes. Thin spaghetti-like strands come out the other side,' demonstrates Gertjan Lok, R&D manager at Delicia and a Wageningen Food Technology graduate. The air in the chocolate sprinkles factory in Tilburg smells of strong, dark chocolate. 'We can now add 20 to 30 per cent less sugar, without blocking up the holes. If we reduce the sugar any more than that, the dough becomes too fatty for the press,' says Lok. And there is another reason why too fatty is not good. A bit further down the production line, a shiny layer is added to the sprinkles. 'If they are not dry



sweet please

enough, that process doesn't work,' says Lok.

ALWAYS DELICIOUS

Delicia has been making chocolate sprinkles for years for nearly all the supermarkets' own brands, each with their own recipe. 'We have been working on alternatives to sugar in sprinkles for a long time, but of course we have to do that in consultation with our clients,' says Lok. 'Sooner or later, whether voluntarily or through legislation, we'll all be using less sugar and we want to prepare for that. And of course, the sprinkles must still be delicious.' Delicia received advice from Wageningen

University & Research on how to adapt the production process. The chocolate sprinkles producer was one of the 10 small to medium enterprises invited by the ministry of Public Health and Sport to spend a day with a Wageningen expert exploring the options for reducing or replacing sugar. This service came out of a 2014 agreement on improving the composition of products between the ministry of Public Health and the food industry. Companies drew up plans for reducing sugar, saturated fat and salt, with the aim of creating a healthier range of products. Most people in the western world consume too much sugar, fat and salt,

with obesity and diabetes as the most widespread harmful consequences.

SMALL STEPS

The industry's plans for sugar reduction are being tested by a scientific advisory committee. 'What is coming out of that is that, with a few exceptions, the ambitions are too low,' says Joost Blankestijn, programme manager at Wageningen Food & Biobased Research. Cutting down is not easy, he explains. One of the problems is that consumers have to get used to 'light' or 'zero' products. 'So producers will have to reduce the amount of sugar in sweets and baked goods such as cookies and cakes in small steps, so >

that consumers actually don't notice,' says Blankestijn. And preferably, all companies should join in, so that consumers can't switch to a cookie, cake or brand of sprinkles made by a producer that hasn't started cutting down on sugar. Cutting down in stages eventually results in a drastic change in taste, but people get used to that, as anyone knows who has accidentally been given a cup of coffee with sugar and is disgusted, whereas there was once a time when they wouldn't have done without that sugar lump.

SOGGY CAKE

Cutting down on sugar has an impact on the technical side of production too. Sugar crystals play an important role in the structure of the product, explains Blankestijn. 'Sugar has a crucial impact on moistness and creaminess during the baking process. A cake with less sugar is usually denser.' Sugar levels affect the 'water activity' too. If you leave out the sugar, the cake is too moist. Apart from the effect on the flavour and texture, it is then more vulnerable to micro-organisms, says Blankestijn. 'So sugar affects the shelf life too.'

These technical characteristics of sugar were tested and scrutinized by Wageningen researchers at the factory of cake manufacturer Peijnenburg. 'The company actually wanted to create a sugar-free gingerbread of the kind typically eaten at breakfast in the Netherlands. We discovered that the natural sugar substitute xylitol, which is extracted from the birch tree, could be turned into a suitable mixture in combination with other sugar substitutes,' says Blankestijn.

After studying the baking process, it also became clear that this alternative had no negative effects on the quality. 'The structure, the moistness and the flavour were all intact.' After three years of research and development, the gingerbread – 'Zero' – was launched on the market.

The stevia plant, with its many sweet components, is another possible option. 'But this natural sweetener is not heat-proof enough to use in baked goods,' says



'The industry needs help with cutting down on sugar'

Blankestijn, as he leads a guided tour of a pilot bakery at Wageningen Food & Biobased Research, where this kind of research is done.

PRICE RISE

Besides changing consumer tastes and the technical properties of sugar, there is a

third challenge facing producers. The Peijnenburg Zero gingerbread is more expensive than its sweet relative. 'We sometimes forget that sugar is by far the cheapest ingredient in the food industry. Any alternative is always more expensive. Even if you could make a sugar-free cake by just adding more flour to keep the original

weight, the price would go up because flour is more expensive than sugar,' says Blankestijn. 'And yet the Zero cake sells well. Consumers are willing to pay a bit extra for it and the advertising campaign is good.'

The findings of Wageningen Food & Biobased Research at Peijnenburg led to a 'white paper' earlier this year, which outlined a sugar reduction strategy. 'In it we describe how we can offer companies fast and effective combinations of sugar substitutes,' says Blankestijn. 'They can read in the report what the impact of a sugar substitute would be on the structure, texture and flavour of their product.'

At the Federation of the Dutch Food Industry (FNLI), food and health manager Christine Grit is pleased with Wageningen's advice to the federation's 20 small and medium-sized enterprises.

'Businesses need help with cutting down on sugar without affecting the quality of their product,' says Grit. 'Producers who have less in-house expertise have particular difficulty with the dilemmas they face. If you reduce sugar, for instance, and thereby increase the amount of starch in the product, you add calories. The same goes for fat as a sugar substitute.'

And then there are the legal implications of replacing sugar with an alternative sweetener such as xylitol. 'There has to be a warning on the label because of the possible laxative effect,' says Grit.

SWEET DESSERTS

The ministry of Public Health and Sport is extending the subsidized advisory service due to its success. Fifteen new companies are currently being selected. 'This time we shall not only visit them but also invite them to come to Wageningen in January for a workshop in our bakery facility. We'll demonstrate all kinds of possibilities, such as cake with no added sugar,' says Joost Blankestijn. 'We are also challenging ingredient suppliers to come and demonstrate their solutions here. And we are going to help the sector to raise the quality of the plans for improving product composition.'

Blankestijn wants to apply the sugar reduction strategy to dairy products too. 'Milk-based desserts are far too sweet. There is much to be gained there.'

At Delicia in Tilburg, Gertjan Lok had already studied the option of substituting the alternative sweetener maltitol for refined granulated sugar. 'Just like xylitol, it is a bit of a laxative. But for technical reasons too, we could only replace a relatively small proportion of the sugar with it,' he explains during a guided tour of the factory.

Lok praises the Wageningen expert who spent a day at the factory going over the technical ins and outs of sugar reduction. 'We came to the conclusion that it is better to reduce the amount of conventional sugar little by little,' says Lok. 'Clients and consumers can slowly get used to it, and we can try out small adjustments to the production process to support that reduction.' Delicia can now produce chocolate sprinkles with 20 to 30 per cent less sugar. 'The main way we did that was by replacing sugar with cocoa. We haven't yet looked into whether we can reduce the sugar even more.'

MAKING THE FIRST MOVE

The product is more expensive, notes the company, as was the case at Peijnenburg. But Lok is undeterred. 'If customers don't want to pay for it, we as the producer will have to make the first move, even if our profit margin falls during the introduction phase. In the end, our customers will cooperate in getting healthier sprinkles into the shops,' he says. That is the company's philosophy. At an earlier stage, this small enterprise decided to use only UTZ-certified cocoa (guaranteeing sustainable farming and production) in its sprinkles. The representatives of the Tilburg company now bring its clients a sample of its sprinkles with less sugar and more cocoa, in the hope that they will opt for this alternative. The low-sugar sprinkles look darker. And, although no chocolate sprinkles connoisseur, I thought it was tastier and creamier than the original. ■

www.wur.eu/sugarreduction



PHOTO XXXX

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'Consumers need to get used to light products'



GERTJAN LOK

R&D manager
Delicia

'We have to make the first move'