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## Less plastic in fulmar stomachs

Almost all Northern fulmars have plastic in their stomachs. Analysis of the figures for 2015 shows a very modest but statistically significant decrease, for the first time in ten years, in the amount of plastic. These results come from the Northern fulmar monitoring programme. This bird, which forages in the North Sea, is an indicator species for the amount of plastic floating in the open sea. At present, the researchers can only guess at the reasons behind the small decrease.

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## NUTRITION AND HEALTH

### Does bread cause irritable bowel?

Bread is becoming less popular while gluten-free is the in thing. Some of the people rejecting bread and other products containing gluten claim that they suffer less from stomach complaints as a result, even though they have not been diagnosed with gluten intolerance. Wageningen Plant Research and Maastricht University will be working with a number of companies and other organizations on the relationship between wheat in the diet and irritable bowel syndrome. It is possible that the problems are being caused by proteins other than gluten or by sugars.

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# Bacterial protein helps to keep mice slim

**Giving mice the intestinal bacterium *Akkermansia* inhibits the development of obesity and diabetes. New research has shown how the bacterium can safely be tested on humans.**

The Wageningen professor of Microbiology Willem de Vos has been working with an international team on *Akkermansia muciniphila* for a while. This bacterium lives in the mucosa that protect the intestinal walls. The researchers showed that in obese mice, this intestinal bacterium can curb the inflammation in the intestines that occurs with obesity and type 2 diabetes. However, treating humans in this way was a problem as the bacterium is adversely affected by oxygen and is cultivated in a medium containing animal components.

It turns out that the inflammation inhibition effect survives pasteurization of the cells (a mild heat treatment). The researchers explain why in their study, published in January in *Nature Medicine*. Pasteurization kills the bacterial cell but a protein on the outer membrane remains intact. Mice

with a diet rich in fats that were given this Amuc\_1100 protein in their food remained just as slim. The researchers were also able to develop a synthetic medium for growing the bacterium.

The Université Catholique de Louvain in Belgium, a partner in the research, is now carrying out an initial study of the effect of the bacterium on intestinal inflammation in humans. The researchers have also submitted patent applications for the findings. De Vos has started up the spin-off A-Mansia Biotech with Wageningen University & Research and the Belgian university in order to scale up production of *Akkermansia* and the membrane protein for possible use as a nutritional supplement or medicine. 'That's the best way of making sure that your knowledge gets used,' says De Vos.

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