

[Live & Learn]

A failed experiment, a rejected paper: such things are soon labelled failures in academia. As for talking about it – not done! But that is just what WUR scientists do in this column. Because failure has its uses. This time we hear from the newly arrived professor of Food Technology Kasper Hettinga.

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'After my Master's degree, I did something not many food technologists do: a PhD. After two years of research, I had nothing. No data, no publications and, above all, no faith left in the project. In retrospect, I was blinkered: I didn't look beyond my own field and I had blind faith in my professor's hypothesis. My PhD research involved working with a device that would "smell" milk and assess its quality and safety. The idea was that dairy factories could use the technology to inspect their milk before pumping it into large silos. That was the

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research plan of the professor who appointed me. But it turned out the technology didn't work. After two years, I was convinced that the research wasn't going to lead anywhere. I was extremely down for months.

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Everything changed when someone on my supervisory committee suggested using the equipment to measure the health of the cows, rather than the quality of their milk. That meant leaving the milk for a while to give bacteria have a chance to grow – a luxury the dairy industry does not have. But it enabled me to measure odour substances in milk that had gone off, and find out which cows had mastitis, for example. I abandoned my original hypothesis and research plan and completed my PhD research in a year and a half.

Nowadays, I always bear in mind that a hypothesis could be wrong and I devise experiments to disprove hypotheses. That is also part of science. I see it happen with my Master's and PhD students too: if their results don't match their expectations, they assume the experiment went wrong. I teach them to be open to new perspectives and possibilities, even if it means you have to deviate from your original plan.'

