



Coffee extract as vegan emulsifier

Melanoidins from coffee dregs or coffee beans can replace animal proteins as a stabilizer and antioxidant in food products. Jilu Feng got a PhD last year for this work and has published two articles with colleagues in the journals *Food Hydrocolloids* and *Journal of Agricultural and Food Chemistry*.

From peanut butter and ice cream to creams and foams, they all contain something to keep the mixture intact. That is because all these mixtures combine watery and oily components that do not mix naturally. An emulsifier solves this problem.

Strawberry ice cream could well taste of coffee

Examples are egg yolk in mayonnaise and milk proteins in dairy products.

Feng and her colleagues in the WUR groups Food Quality &

Design and Food Process Engineering wondered whether coffee melanoidins would also be suitable as emulsifiers. Feng: 'They are safe and easy to extract from coffee beans and coffee dregs. They could offer a natural and sustainable alternative.'

Coffee flavour

Feng filled bottles with mixtures of oil and water, added varying amounts of coffee melanoidins and assessed the stability during a four-week period. 'It worked. A really interesting finding was that higher concentrations led to emulsion gels being formed, so you could use it to change the texture of an emulsion.' The substance also works well as an antioxidant. That is important for food products with unsaturated fatty acids, such as margarine and mayonnaise.

But... doesn't that mean mayonnaise and strawberry ice cream will start tasting of coffee?

'Unfortunately, we didn't consider that aspect in our research. But I suspect the answer is yes because I always smelled coffee when carrying out the experiments. You can also see the brown coffee colour in our bottles.' So the coffee substance is promising, but there are still some obstacles to be tackled first. RL