

Process turns waste whey into profitable products

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Disposing of whey—which is 94 per cent water—can be a headache for some cheese makers, with a kilo of cheese resulting in up to nine kilos of whey as a by-product. Credit: Jesse Gillies

An innovative method of extracting protein from whey has the potential to turn a waste product of cheese making into a valuable by-product which can help make baby formula, baked goods or feed for fish farms or piggeries.

The process won the Innovation in Health Sciences prize at Curtin University's Innovation Commercialisation awards recently.

It involves using biopolymers (polymers made by living organisms) to cause the [protein](#) to precipitate, or sink, to the bottom of the whey and be collected.

"The pH and the amount of biopolymer is critical. You can add those and nothing will happen because you want to optimise the conditions," Curtin University food engineer Dr Tuna Dincer says.

"If you don't get the pH right of the addition, nothing will happen.

Disposing of whey—which is 94 per cent water—can be a headache for some cheese makers, with a kilo of cheese resulting in up to nine kilos of whey as a by-product.

World-wide, 62 billion litres of whey are produced each year, while in Australia cheese makers discard 280 million litres of whey every year.

The Curtin research team's one-step extraction process has been designed for small to medium-size cheese producers.

Large cheese makers often have equipment to process the whey, but in many cases, smaller cheese makers pay to truck whey to farms where it is spread into the soil under supervision.

Trucking whey from factory to farm can cost cheese makers three to four cents a litre.

"We targeted small/boutique to medium manufacturers who do not have the money to invest in equipment," Dr Dincer says.

"We wanted to design something so simple it does not require extra equipment."

The Curtin research team includes Dr Tuna Dincer, Dr Corinne Vallet and Professor Vijay Jayasena (now with the University of Sydney), with the work funded by Dairy Innovation Australia.

The team, which is involved with Curtin's Zero Waste Food group, is seeking further research funding and ultimately commercialisation.

"We have done proof of concept at the lab scale, with a maximum of five litres," Dr Dincer says.

"At the moment we are applying for research funding to do pilot scale trials and we need to do feeding trials as well."

This article first appeared on [ScienceNetwork Western Australia](#) a science news website based at Scitech.

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