

Fern's hunger-busting properties supported by research

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Professor Roger Lentle

Professor Roger Lentle, from the Institute of Food, Nutrition and Human Health at the Massey University, led a team that studied how an extract of the mamaku fern influenced stomach activity. Maori traditionally used mamaku to treat diarrhoea and other stomach complaints, but how it works has not been fully studied.

“The extract comes out of the pith and fronds of the mamaku,” he says. “It’s a very weird substance: it’s stringy and doesn’t flow the way an ordinary liquid flows. The more you stir it the more it resists the flow, and the more it flows the more it stretches.”

These characteristics called sheer thickening and extensional flow are unique in the world of edible plant gums. Professor Lentle says this

means the extract may flow differently in the gut to other carbohydrate gums, tricking it into sensing it is full.

“We know that contractions in the gut are caused by it feeling there is something in there and needing to push it on,” he says. “But this extract seems to dupe the sensory nerves in the stomach so they signal the stuff is flowing when it isn’t, and vice versa. This seems to confuse the stomach's pumping system, causing it to become less effective.”

The gum then builds up in the antrum, the part of the [stomach](#) near the intestine, giving the sensation of satiety, or feeling full when it is overloaded. “We think that the peculiar effect of the gum of flow is what generates the reputed feeling of satiety,” Professor Lentle says. “What’s more its unique properties in resisting flow may make the feeling last longer.”

He says the extract was drawn to his attention by Associate Professor Kelvin Goh, who performed the initial purification. “He told me about it and I saw the potential, so we began testing,” Professor Lentle says.

He believes there is potential for a commercial farming operation. “There is an opportunity there. This extract shows the gum may have significant potential as an appetite suppressant, and it is all natural but more research needs to be done on dose and safety.”

Professor Lentle is keen to work with iwi willing to further investigate the potential of the extract.

Provided by Massey University

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