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Researchers find potential palm oil alternative in microalgae

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SINGAPORE — Oil extracted from a common type of microalgae could be used to replace palm oil, leading to health benefits and sustainability benefits, according to researchers from Nanyang Technological University in Singapore. Results of their work appeared in the February issue of

Journal of Applied Phycology

When compared to palm oil, the oil derived from the microalgae contained more polyunsaturated fatty acids, which have been shown to reduce “bad” cholesterol levels, and fewer saturated fatty acids, which have been linked to stroke and related conditions, according to the university. The palm oil industry also has been linked to deforestation.

Nanyang Technological University researchers created the oil in collaboration with scientists from the University of Malaya in Malaysia. They added pyruvic acid, an organic acid that occurs in all living cells, to a solution with the algae

Chromochloris zofingiensis

and then exposed it to ultraviolet light to stimulate photosynthesis. After 14 days the microalgae were washed, dried and treated with methanol to break down the bonds between the oil and the algae protein, allowing for extraction of the oil. Producing a 100-gram store-bought chocolate bar would require 160 grams of algae, according to the researchers.

“Developing these plant-based oils from algae is yet another triumph for NTU Singapore as we look to find successful ways to tackle problems in the agri-food-tech chain, especially those that have an adverse impact on the environment,” said William Chen, DSc, director of NTU’s Food Science and Technology Program. “Uncovering this as a potential human food source is an opportunity to lessen the impact the food supply chain has on our planet.”