

## Gassy cows are bad for the planet; could seaweed diet help?

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In this Sept. 27, 2018, photo provided by Green Grazing, Australis Aquaculture employee Khanh Huynh checks on seaweed cultures, near Ninh Hai, Vietnam, Australis's "Greener Grazing" project seeks to make a kind of seaweed that helps reduce methane emissions in livestock available to more farmers. (Josh Goldman/Green Grazing via AP)

The smelly reality is that cows will always pass gas. But if farmers had

more access to seaweed, cow flatulence might just stink a little less for the planet.

That's the thesis of a New England-based aquaculture company which is launching a drive to become the worldwide leader in an emerging effort to thwart climate change by feeding seaweed to cows.

The concept of reducing livestock emissions by using seaweed as feed is the subject of ongoing scientific research, and early results are promising. University of California researchers have found that cows that eat seaweed appear to emit less methane, a greenhouse gas that contributes to global warming, when they belch and pass gas.

But one of the big challenges to implementing the seaweed solution is getting enough of the stuff to farmers, and the kind of seaweed that has shown results in cows isn't commercially farmed.

Enter Australis Aquaculture of Greenfield, Massachusetts, which is in the midst of research at facilities in Vietnam and Portugal that is part of its push to become the first farm to produce the seaweed at commercial scale. The company calls the effort "Greener Grazing" and it expects to be operating at commercial scale in two years, said Josh Goldman, the company's chief executive officer.

"If you could feed all the cows this seaweed, it would be the equivalent of taking all these cars off the road," Goldman said. "Greener Grazing's mission is to cultivate this, and accelerate scaling of this kind of seaweed."

The type of algae in question is a red seaweed called *Asparagopsis*, and it grows wild in many parts of the world. Researchers from the University of California, Davis, found earlier this year that methane emissions were reduced by 24 to 58 percent in a dozen cows that ate one variety of the

seaweed, depending on dose.

The seaweed constituted only a small percentage of the cows' food, but researchers found that the dent it could make in emissions would be significant if it were available to farmers. The methane from cow's burps makes up 25 percent of [methane emissions](#) in the U.S., according to the university. The seaweed interrupts the bacterial process of producing methane in their guts, Goldman said.

Challenges remain, said Ermias Kebreab, a professor of [animal science](#) at UC Davis. The seaweed needs more tests to determine if it would impact meat and milk quality from the animals.

The challenge of producing enough of the seaweed is staggering, leading Goldman to call it an "aquatic moonshot." He estimated that the amount of seaweed needed to reach every cattle operation would be greater than the amount presently farmed in the world.

"We need to have a consistent product. We need to find a way to grow it in a more consistent way," Kebreab said.

That's exactly what Australis Aquaculture is working on. The company has collected different strains of *Asparagopsis* seaweed to establish a seed bank of seaweeds that can grow in different climates, Goldman said.

The next step will be to reproduce the seaweed on the company's farms, Goldman said. Creating the seed bank will make it possible for farmers to grow the seaweed elsewhere, he said.

The effort has attracted the attention of the World Bank, said its senior aquaculture specialist Randall Brummett. He said scaling up farming of the seaweed in the developing world could make livestock operations

more climate friendly and boost the economies of poorer nations.

Skeptics remain. The [seaweed](#) has yet to be proven palatable to cows, and the milk that they would yield hasn't proven to be safe for human consumption, said Frank Mitloehner, a professor and air quality extension specialist in the animal science department at UC Davis.

"When you look at it a little deeper, some serious concerns have to be addressed before it can be considered a serious mitigation tool," he said.

There's also the question of whether it will find acceptance with farmers. Jenni Tilton-Flood, a dairy farmer at Flood Brothers Farm in Clinton, Maine, said she'd be willing to try it, but cost and availability are also important.

"As long as the nutrition would be valuable to our animals. We don't just throw food at our cows. We have nutritionists for our cows," she said. "If it can be a food source for livestock, that's great."

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