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# Putting cows on a seaweed diet helps curb their methane burps

Less methane-filled flatulence could make for a more sustainable way to raise livestock.

BY [SHAENA MONTANARI](#) MARCH 23, 2021

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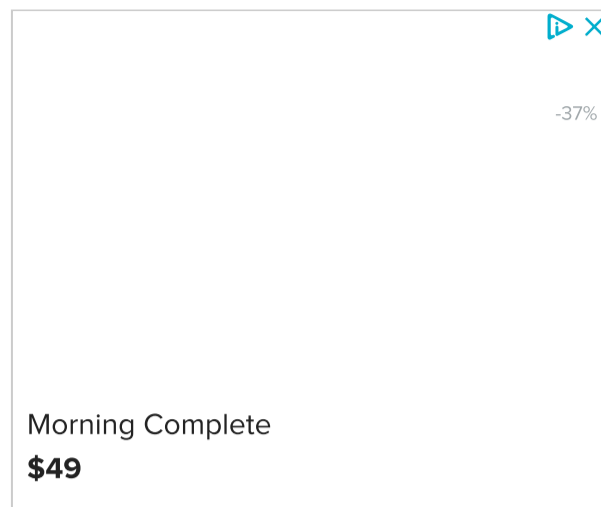
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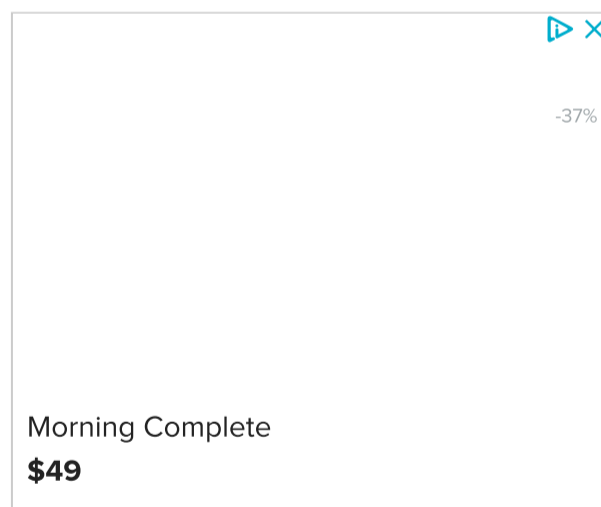
A new study released last week led by scientists at the University of California at Davis showed that adding just a small amount of dried red seaweed to the feed of beef steers reduced their methane production during digestion by over 80 percent, which could have implications for global greenhouse gas emissions if this new cow diet trend could be deployed at a large scale.



Livestock, particularly cows, are potent sources of methane, a powerful greenhouse gas. Globally, livestock are responsible for 14.5 percent of anthropogenic greenhouse gas emissions, with cows being responsible for a large chunk of it. Their digestion is one of the culprits of methane emissions because of their unique stomachs, called rumens. The rumen is filled with microbes known as methanogens that break down plant matter and form methane as a by-product—or simply put, climate-challenging belches.

The study involved altering the diets of 20 male cows, bred specifically for their beef, to test if adding a specific type of red seaweed, called *Asparagopsis taxiformis* and commonly found in warm, temperate waters of Australia, would change how much methane they produce during digestion over a period of 21 weeks.

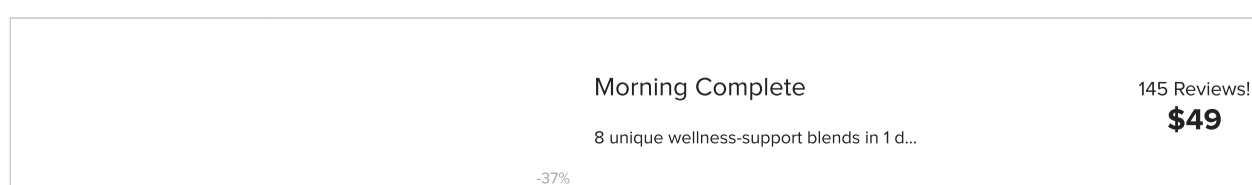
Ermias Kebreab, professor of animal science at UC-Davis and study author, had done a similar study on dairy cows a few years ago and saw that seaweed helped reduce the methane they produced over about a two week period. In this study, he wanted to extend the experiment to make sure the cow's digestive system didn't adapt to the new food, which would reduce the methane-zapping benefits. Luckily, it turns out the benefits of adding seaweed don't diminish over time.

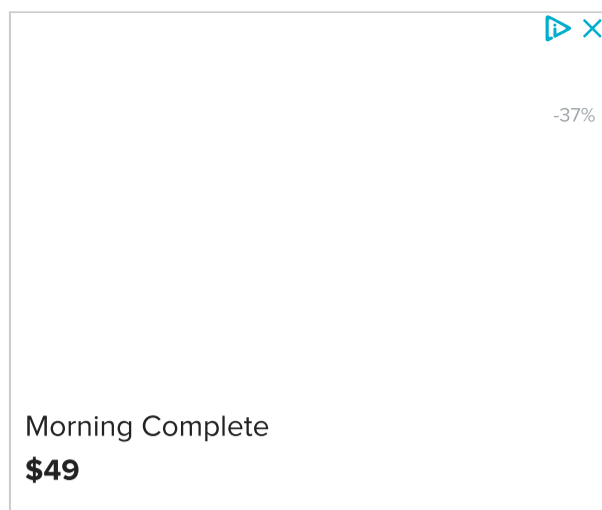


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The cows were divided into two groups: one that had around 50 grams of seaweed added to their diet, and another that had around 90 grams added. The powdered seaweed supplement was mixed into the feed with molasses and water. This specific type of seaweed contains active ingredients that stop the methanogens, the methane-producing microbes that help with digestion, from working to their full potential. When that process is interrupted, less methane is formed during digestion.

Beef cows are fed three different types of diets throughout their lifetime that contain different ratios of plant forage, grain and corn—the starter diet, transitional diet and finisher diet—which was replicated in

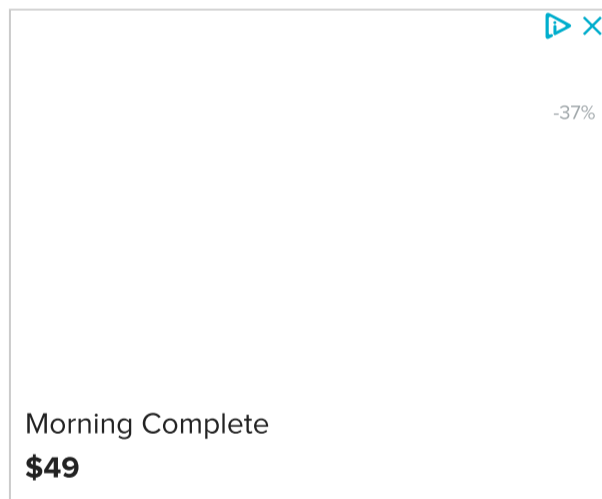




The study also found that the beef cows gained weight similar to cows fed a more traditional diet, which is an important step to getting a methane-reducing supplement accepted widely by the beef industry. Galen Erickson, a professor and beef feedlot extension specialist at the University of Nebraska Lincoln who was not involved in the study, says a factor called performance, which is how much weight a cow gains, is also important to the industry. “I’m intrigued by what is the impact on performance, because that will be very important for adoption...It’d be great if it didn’t have any negative impacts on performance and then just only positive impacts on methane,” he says.

He is most excited about the reduction in methane production in the final “finishing” diet phase in later weeks of the study. “That is not something that’s been normally observed,” he says, in the phase of the diet where cows are eating more grain and corn than plant forage.

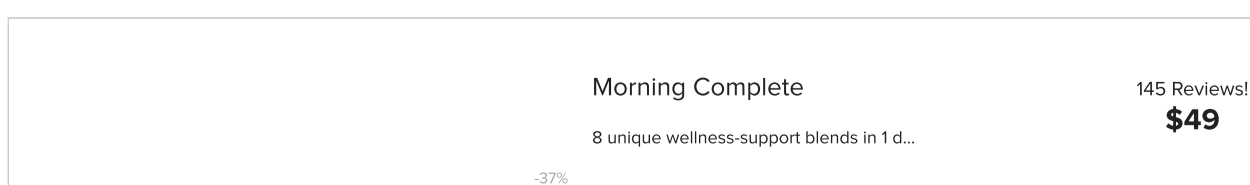
The results seem promising, Erikson says, but with the small sample size and limited study, more research will be needed to specifically see how seaweed supplementation impacts the final carcass weight of the steer compared to cows that eat the traditional diet. The seaweed-supplemented cows also tended to eat less food than their control group peers, Erickson says, so more findings need to be done on if the cows would naturally choose one over the other.

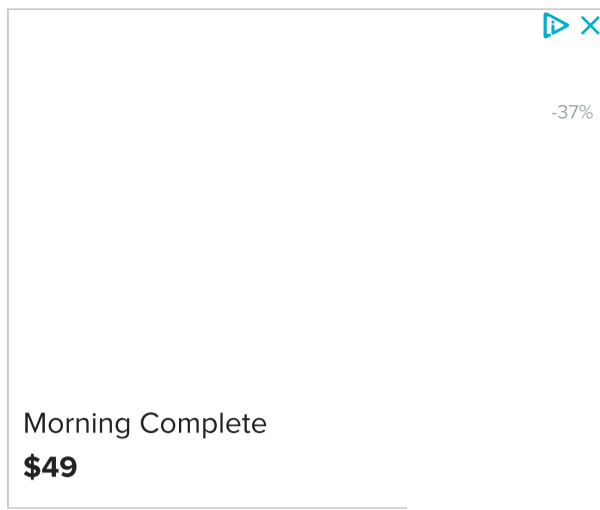


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Kebreab notes that the meat and dairy from these cows doesn’t taste any different, which is another important factor in industry adoption. “We had about 112 people as a taste panel, and they did not detect any differences in taste,” he says, adding that the meat was also graded prime.

Of course, there’s still a lot of work to do before all of the world’s dairy and meat cows have a taste for red seaweed.“I think we just need to work out exactly how it can be grown and packaged and processed, and all that,” Kebreab says, “I have high hopes for it.”





Studies such as this one show that there are potential ways to produce for meat with less of a greenhouse gas footprint, which is crucial for making sure people get the calories and nutrients they need to be healthy. Not everyone in the world is able to reduce their meat or dairy intake for the sake of the climate, Kebreab says. While some people are able to take vitamin supplements to get nutrients they might be missing from not eating animal products, being able to completely avoid meat products, especially when accounting for where people live and how much money they have to spend on food, is no guarantee. “The majority of the world doesn’t have that luxury,” he says.

**Correction 03/24/21:** The headline has been updated to more accurately reflect the contents of the article.

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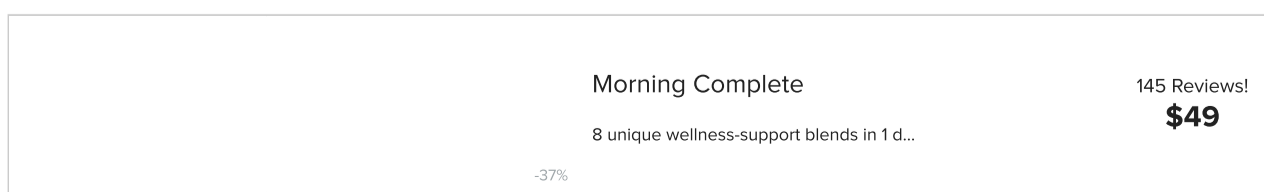
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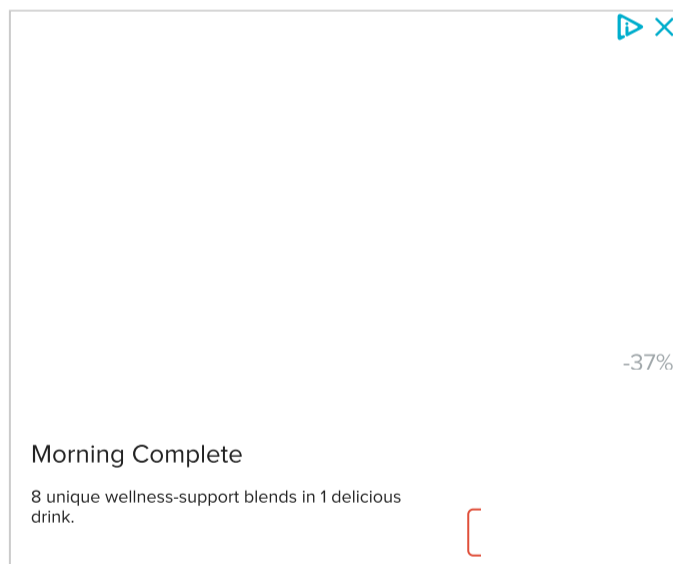
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