Stanford eCorner

A New Process for Protein

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Lisa Dyson, founder and CEO of Air Protein, explains how her company is motivated to find a new way to produce protein because the current technologies — such as raising cattle — are inefficient, especially given the planet's growing population.

Transcript

- I'll talk about food in a way 00:00:04,800 that we probably don't hear people talking about a lot.. And I'll say that the technology that we use right now to make a steak can take up to two years, and it has the greenhouse gas footprint of a car.. And that technology, as I'm calling it, of course, is a cow.. And so it's hugely inefficient.. It's the same way that my grandparents made food, and that might sound fine, but when my grandparents were kids, there was 1.6 billion people on the planet.. Now there's about 8 billion people on the planet, and by 2050 there's gonna be about 10 billion.. And so right now, the food industry is one of the largest greenhouse gas emitters, and it contributes to massive amounts of deforestation.. So there's a lot of issues.. As we get more people, where are we gonna get more land from to grow and, you know, for cattle grazing to grow crops to feed the cows and all the other forms of meat as well, and how we're gonna do this without breaking the planet.. So that's really the why we're focused on protein, because protein is a critical part of our diets..

We're gonna need to increase protein content or protein production for more people on the planet.. So at Air Protein, we focus on doing it in a way that from cradle to gate is carbon negative.. And that doesn't require any arable land, no agricultural inputs whatsoever.. And if you allow me to go back to another invention that we're kind of following as well is, you know, back in 1898, the newly inaugurated president of the Royal Academy for the Association of the Advancements of Sciences gave a talk about why the 19th century farmer was struggling.. And it was because there wasn't a lot of natural sources of fertilizer.. And so he issued a charge for innovators, for scientists during his inaugural talk to create innovations to actually pull nitrogen out of the air to make nitrogen fertilizer.. Tom Wow.. 00:02:04,140 has nitrogen from this process that was created.. The Haber-Bosch process ultimately was created to solve that problem, and Haber won a Nobel Prize for that.. And so, that was to pull nitrogen out of the air so that we can grow crops and do that more quickly..

And now we have this huge issue where we're running out of land and with this population explosion, as it were, running out of land and we have all these greenhouse gas emissions, so why not just pull food out of the air directly?..