



Deep Branch has developed a fermentation method that uses CO2 as feedstock to produce low-carbon animal feed | Photo source [Leon Ephraïm on Unsplash](#)

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## LOW CARBON MEAT FOR ECO-FRIENDLY CARNIVORES

 AGRICULTURE & ENERGY

### A biotech startup has developed a way to convert greenhouse gas into protein for animal fodder

**Spotted:** According to tech startup Deep Branch, agricultural production accounts for around one-quarter of all greenhouse gas emissions – with the bulk of this coming from animal products. Although the best way to reduce this is to reduce the number of animal products that we eat, the company has come up with an alternative — a protein source derived from carbon emissions.

The company uses micro-organisms to synthesise carbon dioxide into a protein-rich powder they call Proton. Deep Branch uses similar technology to other companies that produce protein from bio-fermentation. However, instead of using methane or sugars as a feedstock, Deep Branch uses CO2, giving it significantly lower input costs and a lower carbon footprint.

The resulting protein has a comparable nutritional profile to fishmeal and can be used in livestock feed as a replacement for fishmeal and soy-based proteins. Deep Branch has already signed a deal to use CO2 captured at power plants owned by British energy company Drax. The company estimates that not only will the production of Proton require 90 per cent less carbon than alternative protein sources, it will also sequester about the same amount of CO2 as is emitted by 300,000 cars each year.

Deep Branch chief executive and co-founder Pete Rowe has explained the company's thinking, **saying**, "We face two big issues: how do we reduce CO2 and how do we provide more food in a sustainable manner. But what if you could solve two problems in one – what if you could use carbon to produce food?"

Here at Springwise, we have seen a rapid increase in the number of innovations that use bio-fermentation to create products from waste. Some recent innovations in this space include a fashion brand that [grows trainers](#) from microbes and a company that uses captured CO2 to make [renewable fuel](#).

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26th April 2021

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### **Takeaway:**

Livestock farming is by far the least efficient form of food production in terms of the amount of nutrition it produces. For example, according to the FAO, beef farming produces somewhere around 50kg of CO2 equivalents for every kilogram of meat. While giving up meat is seen by many as the best option for reducing CO2, this is not always practical. Instead, Deep Branch is offering a third way, of creating lower carbon meat, that it hopes will relieve some of the pressure.