

New study provides food carbon footprint pecking order

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The authors have produced a simple list to illustrate what one kilogram of greenhouse gas emissions buys on average. Credit: Lancaster University

Researchers have compiled the first comprehensive carbon footprint league table for fresh food so chefs, caterers and everyday foodies can cook meals without cooking the planet.

The greenhouse gas emissions dataset by researchers at Lancaster University and RMIT University and will help consumers and catering firms calculate the environmental impact of the [fresh food](#) they eat and the menus they serve.

The new research suggests altering our eating habits for the good of the environment.

Dr Stephen Clune, of Lancaster University, and colleagues from RMIT, in Melbourne, have identified a clear greenhouse gas emissions hierarchy emerging across food categories.

Grains, fruit and vegetables were found to have the lowest impact, followed by nuts and pulses. Chicken and pork (non-ruminant meat) had a medium impact.

Fish also had a medium impact on average. However, results between species varied

significantly. Meat from beef and lamb (ruminant animals with multiple guts) had the highest impact.

The authors had worked with a residential age care organisation to develop a sustainability strategy to help reduce their green house gas emissions.

A key finding was that the food served to residents contributed to a large portion of the [environmental impact](#).

While they were aware of various strategies that could reduce this impact (such as having less red meat), to estimate the impact of a revised menu with some credibility was exceptionally difficult as the information was so dispersed.

This started their attempt to understand more clearly the global warming potential of differing foods.

The aim of the research was to develop a dataset to support consumers and catering organisations calculate the impact of their ingredients and menus.

The paper, a systematic review of greenhouse gas emissions for different fresh food categories, is published in the *Journal of Cleaner Production*.

The paper reviewed 369 published studies that provided 1718 global warming potential values for 168 varieties of fresh produce including vegetables, fruit, dairy products, staples, meat, chicken and fish.

The authors have produced a simple list to illustrate what one kilogram of [greenhouse gas emissions](#) buys on average:

- 5.8 kg of onions – approximately 50 medium onions
- 3.5 kg of apples – approximately 20 medium apples
- 2.6 kg oats

- 1 kg lentils
- 1.2 kg of peanuts
- 0.8 litres milk
- 290 g salmon
- 290 g eggs – approximately 5 small eggs
- 270 g chicken
- 160 g UK pork
- 40 g UK beef or lamb

Dr Stephen Clune, from Lancaster University, said:
"You would have a hard time arguing that you can replace beef with onions as they serve very different culinary and dietary requirements.

"However, it is possible to substitute red meat (beef and lamb) with other meats, or plant-based protein sources such as lentils and nuts that have a lower impact.

"Our results could be used with confidence to plan menus for individuals and catering companies who want to reduce their [carbon footprint](#), by selecting foods from different categories."

Provided by Lancaster University

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