

****PRESS RELEASE****

Reducing egg consumption improves animal welfare and reduces environmental impact

At the University of California, and beyond

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As an undergraduate student at the University of California, Santa Barbara (UCSB), Audrey Horn became interested in improving the animal welfare impact of foods on campus. She received a Global Food Initiative fellowship from the University of California (UC), and worked with Mickael Blancho, who was then the production manager of UCSB general dining. Mickael was committed to creating healthier and more environmentally sustainable campus dining choices. They focused on changing from egg-based to plant-based mayonnaise, and by December 2016, all mayonnaise in general dining was plant-based.

In a [paper published on line](#) in the journal *Agriculture and Human Values*, UCSB Research Professor David A. Cleveland and co-authors estimated how much this replacement of egg- with plant-based mayonnaise improved animal welfare, and reduced environmental impact.

They measured improved animal welfare as the reduction in number of chickens in the stressful and unhealthy conditions of the US egg industry. They counted chickens involved in egg production from the time of hatching to the end of life as laying hens, which includes the 50% of chicks which are male, and disposed of right after hatching.

According to Cleveland, the positive effect of reducing egg consumption on chicken welfare would be large even if welfare certified eggs are replaced, “since the requirements of most chicken welfare certification programs do relatively little to reduce chicken suffering.” While the trend of increasing efficiency to increase profits decreases some egg industry environmental impacts, it is also associated with decreased chicken welfare.

Using USDA data, the researchers calculated that for every 1000 eggs reduced per year, there would be 6.3 fewer chickens used in the egg

industry. The switch to plant-based mayonnaise in general dining at UCSB resulted in 14 fewer chickens required annually. If this switch happened for all dining on all UC campuses, 924 fewer chickens would be required.

While the impact on animal welfare of plant-based mayonnaise was relatively small, they also estimated the substitution of eggs with tofu, which has similar nutritional value. Substituting 50% of eggs with tofu in first-year student breakfasts on all UC campuses would reduce the number of chickens in the egg industry by 9,245 annually. If everyone in the US made this substitution, there would be 46 billion fewer eggs produced, and 290 million fewer chickens in the poor welfare conditions of the egg industry.

In addition to improved welfare, replacement of eggs by plant foods would reduce greenhouse gas emissions by 43-53%, and irrigation water, reactive nitrogen, and land use by 63-98%, from that of eggs. These results are consistent with research showing that animal-source foods overall have a much larger environmental impact than plant foods.

Substituting egg-based with plant-based mayonnaise was relatively easy because it didn't require people to make new food choices. Substituting tofu or other plant foods for eggs would require more active awareness on the part of eaters. It has been shown that more information about the impact of food choices, along with improved food options, helps move choices toward foods with lower negative impacts.

These kinds of food system changes are beginning to be implemented at the UC, on many other higher education campuses in the US, and world wide. "Our research supports these changes, and contributes to UC and UCSB food policies for improving food on campus" Cleveland said.

SOURCE: Cleveland, D.A., Q. Gee, A. Horn, L. Weichert, M. Blancho. (2020) How many chickens does it take to make an egg? Animal welfare and environmental benefits of replacing eggs with plant foods at the University of California, and beyond. *Agriculture & Human Values*.

[Available on line](#), or via [email](#) from Cleveland.

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