

Is an *organic* diet the most sustainable?

- **What is an organic diet?**

Organic produce does not contain GMOs, antibiotics, growth hormones, or pesticides.

Organic meat and dairy products are also free of the antibiotics, pig and chicken byproducts, growth hormones, pesticides, sewage sludge and arsenic based drugs that you find in conventionally raised animals. Because of this, an organic diet is more nutrient rich, contains fewer nitrates, and contains fewer heavy metals.

- **What effect does organic farming have on the food web?**

Organic agriculture promotes species richness. According to a study done from the *Journal of Applied Ecology*, “On average, the increase in species richness [of organic farming] was around 30% compared with conventional farming” (Bengtsson, Anhstrom, Weibull 2005). This means that there are a higher number of species living within organic communities.

This allows there to be more species available for energy transfer within a food web, thus promoting ecosystem energetics.

- **What effect does organic farming have on the environment?**

“About half of the emissions from the agricultural sector come from the use of fertilizers, of synthetic or animal origin, which has high nitrogen content, and half of the livestock” (Ahlem, Hammas 2017). Because organic farming does not use these fertilizers (and pesticides), there is less groundwater pollution, which means less harm to organisms and the trophic structure.

- **Is an organic diet the most sustainable?**

Based on the evidence, the organic diet is more sustainable than a conventional diet. It uses 45% less energy and does less harm to the environment (Miller 2016). Although the yield for organic farming tends to be less than conventional farming, in the future we can research strategies to maximize yield in order to sustain ourselves.

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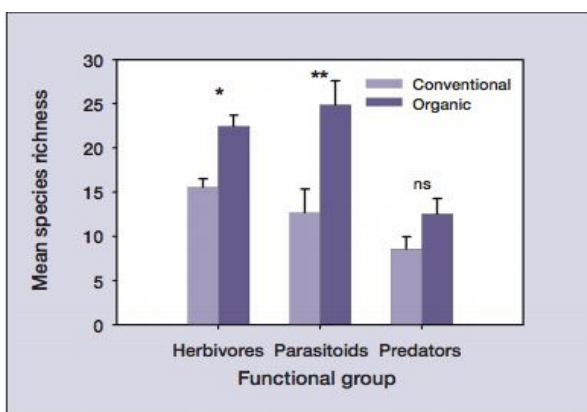


Figure 1. Mean species richness of herbivores, parasitoids, and predators in conventional versus organic farming. Study done on 10 organic farms and 9 conventional in Sacramento Valley. Organic farming has a higher mean species richness in all categories. (Letourneau, Bothwell 2008)

Citations:

Letourneau D, Bothwell S. Comparison of organic and conventional farms: challenging ecologists to make biodiversity functional. 2008 Oct [accessed 2019 Apr 5]. <https://pdfs.semanticscholar.org/9fc2/22a9f801baf0a64d10a5bee60c7641c3f215.pdf>

Bengtsson J, Ahnström J, Weibull A-C. The effects of organic agriculture on biodiversity and abundance: a meta-analysis. 2005;42(2):261–269.

Hammam MA, Ahlem Z. Organic Farming: A Path of Sustainable Development. 2017;06(05).

Miller F. The BiG Stink: Organic vs. Conventional, Round 3 – Energy Use. 2016 Aug 25.

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