

Can organic agriculture feed the world? A review of the research

500 word abstract

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Concerns about climate change and energy scarcity are increasing. We need to reduce both the energy inputs and greenhouse gas outputs of our current food production system. Organic farming shows proven benefits on each of these counts, but many critics have argued that a large-scale organic conversion would entail dramatic reductions in global food yields, leading to widespread famine. This has led to a surge of interest in the question 'Can organic farming feed the world?' resulting in a number of recent studies on the subject. In response to the growing debate, the Soil Association undertook a review of all the recent published research making claims about the potential of organic farming to feed the world. This paper reports the strengths and weaknesses of this research over the past eight years.

Results from recent published research assessing the available data on global yields suggest that organic farming does have the potential to produce enough food. All of the studies reviewed showed the potential of organic farming to produce enough food to feed the world's current population. In contrast to the intensive agriculture of the North, non-organic farming in the South is typically low-input and low yielding. Here, the introduction of organic agricultural techniques can produce dramatic increases in yield, without financial outlay on new crop varieties, chemical fertilisers or pesticides. However, comparative organic yield studies in the South do not allow definite conclusions to be reached, and there are reasons to suggest that yield studies are unlikely to provide enough evidence for more than a general picture of how organic systems would perform. For example, the unique conditions inherent to local organic systems make it less easy to generalise data, compared to the more uniform conditions created by the extensive use of oil-based chemicals in non-organic farming.

The inability of the current food system to feed the current world population, despite sufficient crop yields, suggests a need for a more sophisticated approach to assessing the capacity of farming and food systems to feed people. Overall, studies looking into the comparative yield performance of organic and non-organic systems will surprise many with their findings that organic farming can feed the world. However, any discussion that deals solely with farming yields risks perpetuating the myth that producing sufficient food globally ensures the end of world hunger. What is certain is that yields alone do not feed human populations. Indeed, we are also learning that sufficient food of the wrong type can be a curse not a blessing, as first developed and increasingly developing countries succumb to epidemics of childhood and adult obesity. Organic farming can provide a more drought resistant, nutritionally diverse food supply for local people. In future, research should focus on the capacity of organic farming to provide a healthy diet for the world's population, in particular for those most in need, in conditions of climate stress, without reliance on expensive external inputs (whether seeds, fertilisers or pesticides), with minimal use of fossil fuels and greatly reduced greenhouse gas emissions.

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