

Good can organic farming feed the world argumentative essay example

[Food & Diet](#), [Organic Food](#)



Lately there is a fierce debate going on whether not the organic farming has the capacity to provide food for 6 billion people in the world. Organic farming is a form of agriculture which is more eco-friendly emphasizing on natural way of food production. Unlike conventional farming in which copious amount of fertilizers, insecticides and pesticides are used; organic farming relies on natural means like compost, manure and other natural sources of fertilizers which are not produced in a chemical plant (HDRA). Organic farming does not use any synthetic fertilizers or artificial means to control pests and weed. Instead it depends on rotating crops to curb the problems of pests and weeds. It is the popular belief that conventional farming practices are quicker in controlling pests and producing greater amount of foods than organic farming. Many people also believe that since organic farming involves the technique of rotating crops to keep pests and weeds at bay, the same field used for producing corn or wheat cannot be used very often, leading to either more demand for farm lands or fewer crop yields, not sufficient to feed the entire world (Miller, 2010). Norman Borlaug, the American Nobel laureate who is often referred as the 'father of the green revolution' supporting the view that organic farming would convene the need for more farm lands stated in a conference in 2002 that, " We aren't going to feed 6 billion people with organic fertilizer. If we tried to do it, we would level most of our forest and many of those lands would be productive only for a short period of time" (Worldwatch Institute, 2013). This fear based on the assumption that organic farming would invite a problem of worldwide starvation or more need of farm lands actually overrides the fact that the synthetic fertilizers and pesticides used in conventional farming pass

carcinogenic elements into the crop yields and continuous consumption of these foods may contribute to a number of life-threatening diseases. In fact, in recent times a lot of studies and research results have showed that organic farming not only could satisfy the food requirements of hungry population but in some cases it produces more yield than conventional farming.

John Emsley, a chemist and a spokesperson of agriculture, has stated his view more bluntly, " The greatest catastrophe that the human race could face this century is not global warming but a global conversion to ' organic farming'-an estimated 2 billion people would perish" (Worldwatch Institute, 2013). Indeed, the concern for food shortage as a likely outcome of organic farming is deep rooted in the minds of many. But myriads of studies conducted all over the world show that organic farms can produce the same amount of crops and in some setting more than the amount produced by conventional farming. For example, one study involving a team of scientists from Michigan who visited an organic farm nearby to estimate how much food could be produced if the globe shifts to organic farming came up with the result that though organic farming yields crop lesser in amount than conventional farming, the gap is absolutely negligible. They tested two models of which the first one was a bit conservative as it compared the yield ratio for the developed world to the entire planet and came up with the finding that it produced 2, 641 kilocalories a person per day, lower than the current production of the world at 2, 786 calories per person a day but considerably higher than the average requirement for a healthy person who needs between 2, 200 and 2, 500 calories per day (Worldwatch Institute,

2013). The second model compared the yield ratio for the developed world and the developing world with that of wealthy nations and came up with the finding that it produced 4,381 calories a day for per person, 75% more than the quantity needed to support the human population in the world currently. So the argument that organic farming would lead to starvation is completely baseless.

There is a popular belief that rotational cycle in synthetic conventional farming method yields more than that of organic farming, but it is not true. In agriculture rotation crops are a well-known fact to keep the yield high and the soil nutrient rich. Even in ancient China and Europe rotational crops were used to keep the yield level high and then came the green revolution. Rotational crops along with the benefits of modern farming have taken the yield even higher. In case of conventional non-organic farming methods a 2 year rotation cycle is required whereas for organic a minimum of 3 years cycle is required to keep the yield level at same level. This clearly shows that if we shift to organic farming then the yield for our main crops in the rotation farming will be reduced by 33% only because of a larger rotational crop cycle (Badgley & Perfecto, 2007). However, this is only a very gross assumption. If we take a deep dive into the problem, we will notice that in the world the main three staple crops are rice, wheat and corn. Rice is grown on fields tailored for rice so that nothing else can be cultivated there and hence rice cannot be a rotational crop. For wheat, the data shows that using equal lengths of rotational cycle for conventional farming or organic farming would produce the same amount of yield for both. So the only crop that gets affected by rotational cycle because of organic or conventional farming is

corn. Let's say, for corn we use a 2 year cycle with corn-soybean rotation using conventional farming and use a 3 year cycle with corn-soybean-wheat cycle with organic farming. Then we will have reduction in corn yield by 33%. Assuming the current world grain yield of the major three crops is 93%, it will come down to 84%. In developed countries the current calorie intake is 2,641 which will reduce to 2,523, still higher than the recommended calorie level for per day (2500 calories) per person (Badgley & Perfecto, 2007). Even some may argue that these calculations are optimistic and in fact the organic yield is even less. However, the truth is that the figures used are conservative as most of the conventional corn rotations already use a cycle of more than 2 years.

The main argument made against organic farming is the nitrogen requirement in the soil cannot be fulfilled by the availability of green manures and plant residue. This argument is not completely true. Nitrogen is one of the main nutrients which are required in the soil for the yield level to remain high. The main problem is that if a field is irrigated with corn for 3-4 subsequent years then the yield level of corn will go down drastically due to less nitrogen availability in the soil. Nitrogen can be replenished in the soil from compost, manure and plant residue (Worldwatch Institute, 2013). However, in case of synthetic farming nitrogen gets replenished from inorganic manures like ammonia. These fertilizers can replenish the nitrogen quantity in soil immediately. This is the main reason why synthetic farming methods are so popular because it is easy to maintain yield using this method. However, the same can be achieved using organic fertilizers as well with proper rotational cycle. Firstly, most of the main crops fall under

rotational cycles. If the proper rotational cycle can be identified then the rotational cycle itself will help the nitrogen replenishment. For example, a wheat-soybean-corn cycle or corn- alfalfa -wheat cycle does not require any synthetic manure to improve the nitrogen in the soil (Heiniger & Hamilton, 2005). This will reduce huge need for synthetic nitrogen manure requirement around the world. Rest of the requirements can be met from the organic green manures, compost and plant residue. This way organic farming will be able to keep the yield level high with required nitrogen in the soil.

The main argument for conventional farming is that there is huge yield gap between conventional and organic farming methods. In fact the department of agriculture in US once said that if all the conventional farms are converted to organic farms then the overall yield will go down by as much as 50% (Worldwatch Institute, 2013). This means that to produce the same amount of food the required land for farming will be double. However, that statement was not substantiated by data. In recent years it was found in US that the yield difference between organic and conventional farming methods is maximum 20% for a long period. In many cases and for some of the rotational crops there is in fact no yield difference. The figures are even more encouraging in developing countries. In case of developing countries there is absolutely no difference between conventional and organic farming yields. In fact organic farming methods give more yield than conventional methods especially in dry lands and areas where water is little scarce. This is because in case of rotational crops using organic farming the cover crops and weeds help retain water in the soil. In case of synthetic manures, it kills all the weeds and natural covers from the soil and water retention is less.

Studies at Kenya and India confirmed that organic farming at dry areas with rotational method actually give more yield than conventional method (Worldwatch Institute, 2013). This agricultural method is more sustainable as farming is done at a more localized level using local organic resources and not exported from some other country where farming is done at a very large scale using synthetic manures and chemicals.

In conclusion, as the population of the world is growing so is the demand for food. To meet the demand for food, we have invented methods by which we can maximize yield of grains from a small agricultural land. Synthetic methods of agriculture, also known as the conventional method, use copious amount of chemicals, synthetic manures and pesticides to maximize the yield. In this process a land produces exceptional yield in a span of 20-30 years but slowly loses its fertility due to excessive usage of chemicals.

Organic farming on the other hand may have yield less than conventional farming but it continues to provide good yield for hundreds of years if practiced properly. In US and Europe it is argued that, moving to organic farming will reduce the yield drastically. However, the recent studies show that the gap of yields between the two is negligible. Rather in some settings organic farming can produce more yield than conventional farming. Another argument often cites that maintaining the nitrogen in the soil using organic manures is not possible. However, if organic farming is done in conjunction with crop rotation then nitrogen level is maintained and the yield also remains high. In fact organic methods with rotational crops produce better yield in water scarce areas. Places like sub-Saharan region and some part of India have shown superior results using organic farming. Although many

believe that organic farming will not be able to meet the food requirement but on the contrary it is seen that it is possible to feed the world using organic farming.

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