



Cultivating Change: A Deep Dive into Organic versus Conventional Agriculture

Jyotishree Anshuman^{1*}, Shreya Kar²

^{1*}*Ph.D. Scholar, Department of Agricultural Extension Education, College of Agriculture, Odisha University of Agriculture and Technology, Bhubaneswar, Odisha, India)*

²*Msc. Scholar, Department of Extension Education, College of Agriculture, Punjab Agricultural University, Ludhiana, Punjab, India*

(***Corresponding Author-** Jyotishree Anshuman, **E-mail:** 1997j.anshuman@gmail.com)

Abstract

The article “Cultivating Change: A Deep Dive into Organic versus Conventional Agriculture” delves into the ongoing debate between organic farming and conventional farming practices. It begins with an introduction outlining the significance of this comparison amidst evolving agricultural landscapes. Highlighting the fundamental differences between organic and conventional farming, it explores their distinct approaches to pest control, soil fertility, and environmental impact. The article then discusses the potential future trajectories of farming, considering factors such as consumer demand, technological advancements, and sustainability imperatives. Finally, a brief conclusion underscores the importance of finding a balanced approach that ensures food security and environmental stewardship in the agricultural sector.

Keywords

Conventional, Farming, Organic, Sustainability

Introduction

Organic and conventional farming differ significantly in their approaches. Conventional farming heavily relies on chemical methods to control pests, weeds, and provide plant nutrients. In contrast, organic farming utilizes natural fertilizers, emphasizes crop rotation for soil fertility, and maintains soil health. In conventional farming, the overuse of artificial pesticides leads to land and soil degradation over time, resulting in infertility due to exploitation.

Organic Farming	Conventional Farming
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Benefits	
<p>Environmental Sustainability: Organic farming promotes soil health, biodiversity, and water conservation. By avoiding synthetic chemicals, it reduces pollution of soil, water, and air.</p> <p>Healthier Food: Organic produce tends to have higher levels of certain nutrients and lower levels of pesticide residues, which may contribute to improved human health.</p> <p>Improved Soil Health: Organic cultivation methods prioritize soil fertility through practices such as cover cropping, green manure, and composting. These techniques increase soil organic matter, enhance microbial activity, and improve nutrient availability, leading to healthier and more resilient soils.</p> <p>Supports Biodiversity: Organic farming practices such as crop rotation, intercropping, and the maintenance of natural habitats promote biodiversity by providing habitats for various organisms.</p> <p>Promotes Animal Welfare: Organic livestock farming standards prioritize the well-being of animals, including access to outdoor spaces, organic feed, and the prohibition of certain</p>	<p>Higher Yields: Conventional farming methods often result in higher crop yields per acre compared to organic farming, due to the use of synthetic fertilizers, pesticides, and advanced breeding techniques.</p> <p>Lower Cost of Production: Conventional farming typically involves lower labor costs and higher mechanization, leading to potentially lower production costs for farmers.</p> <p>Improved Food Availability: Conventional farming's ability to produce higher yields helps meet the growing global demand for food, contributing to food security and stability.</p> <p>Advanced Technology Adoption: Conventional farming often integrates advanced technologies such as precision agriculture, genetically modified crops, and automated machinery to optimize production efficiency.</p> <p>Market Stability: Conventional farming practices are well-established and can benefit from stable market demand, providing more predictable income for farmers.</p>



<p>growth hormones and antibiotics.</p> <p>Reduced Energy Consumption: Organic farming typically requires less energy input than conventional farming methods, as it relies on natural processes and minimizes the use of fossil fuel-based inputs.</p>	
Drawbacks	
<p>Lower Yields: Organic farming often yields lower outputs per acre compared to conventional farming, which can result in higher prices for organic products and lower availability.</p> <p>Risk of Pest and Disease Damage: Without synthetic pesticides, organic farmers may face greater challenges in managing pests and diseases, leading to potential crop losses.</p> <p>Transition Period: Converting conventional farmland to organic status involves a transition period during which farmers must adhere to organic standards but may not yet be able to sell their products as organic. This transition can be financially challenging.</p> <p>Certification Costs: Obtaining organic certification can be costly for farmers, especially small-scale producers, which may discourage some from pursuing organic</p>	<p>Environmental Degradation: The intensive use of synthetic inputs in conventional farming can lead to soil degradation, water pollution, loss of biodiversity, and negative impacts on ecosystems.</p> <p>Health Concerns: Chemical pesticides and fertilizers used in conventional farming may pose risks to human health through exposure residues on food and environmental contamination.</p> <p>Reduced Soil Health: Continuous use of synthetic fertilizers can degrade soil health by disrupting its natural nutrient cycles and microbial activity, leading to decreased fertility and resilience.</p> <p>Resistance and Resilience: Continuous reliance on chemical pesticides and genetically modified crops may lead to the development of resistant pest populations and</p>



practices. Market Instability: Organic farming is subject to market fluctuations and may be influenced by consumer trends and preferences, making it less predictable for farmers.	reduce the resilience of farming systems. Loss of Genetic Diversity: Conventional farming often prioritizes a few high-yielding crop varieties, leading to a loss of genetic diversity and potential vulnerability to pests, diseases, and environmental changes.
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[Farm Fresh Bangalore \(2019\)](#), [Raja Varun \(2023\)](#)

Future of farming

What does the future hold for agriculture? Will it lean towards more organic methods or stick to conventional practices? Farming techniques are changing rapidly due to factors like climate change, disruptions in supply chains, and consumers' increasing preference for sustainably grown, nutritious food. However, there's also a significant rise in the global population, particularly in traditionally underprivileged areas.

The security of our global food supply relies on producing enough food without harming ecosystems or exacerbating climate issues. Given the recent surge in demand for organic food and the expected rise in wealth in developing nations, it's likely that organic producers will remain highly sought after in the future. According to the 2022 survey conducted in 187 countries practising organic agriculture by the international resource data from the Research Institute of Organic Agriculture (FiBL) and International Federation of Organic Agriculture Movements (IFOAM), organic food in India is cultivated in 2.6 Mn hectares, fifth largest in the world. The report further revealed that the share of land used for organic farming in total agriculture land is 1.5%, and in the last ten years, India increased its organic agriculture land under cultivation by 145.1%. The Economic Survey 2022-2023 mentions that India has 4.43 Mn organic farmers, the highest in the world.

As for conventional farming, it seems it will adapt to resemble organic practices more closely than it has in the past few decades. Despite continuing to use chemical products, conventional farmers are facing pressure from the market to adopt more sustainable methods. Additionally, conventional farmers will increasingly embrace technology and scientific advancements to enhance resource efficiency and adopt precision agriculture practices, aiming to improve the environmental and economic sustainability of their operations. Despite the growing demand for organic products, conventional farming will still be a viable option in the future.

Agrivi (2022), Aggarwal (2023)

Conclusion

In conclusion, the debate between organic farming and conventional farming underscores the importance of considering the long-term impacts on both agricultural practices. While conventional farming relies on chemical intervention for immediate yields, organic farming prioritizes sustainable methods that promote soil health and environmental conservation. As consumers become increasingly conscious of their food choices and environmental impact, the future of agriculture may lean towards a more balanced integration of both approaches, emphasizing the need for further research and dialogue to ensure food security and sustainability for generations to come.

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