



Current Developments in Organic Farming

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INTRODUCTION

There are many definitions of organic farming, which is also known as ecological agriculture or biodynamic agriculture. Some have considered organic farming and sustainable agriculture synonymous, because they are both based on sustainability of agro-ecological systems. Sustainability can be defined as meeting the need of the present without compromising the ability of future generations. The word "organic" is legally protected in some countries, avoiding their indiscriminate use in non-organic products. In the European Union (EU), for example, this word has been protected since the early 1990s in English speaking countries. The equivalent in French, Italian, Portuguese and Dutch speaking countries is "biological", and "ecological" in Danish, German and Spanish-speaking countries.



Organic farming according to Henning is both a philosophy and a system of farming, grounded in values that reflect an awareness of ecological and social realities and the ability of the individual to take effective actions. In practice, it is designed to work with natural processes to conserve resources, encourage self-regulation through diversity, to minimize waste and environmental impacts, while preserving farm profitability.



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Current developments in organic farming

Organic farming uses almost exclusively biological and natural materials and processes to produce food. The practice aims to protect human health and conserve, maintain or enhance natural resources, with the goal to preserve the quality of the environment for future generations while being economically sustainable. Organic farming has grown rapidly throughout the world in recent years. Currently, Australia (Oceania) has the largest land areas under organic farming, Liechtenstein (Europe) the highest percentage of organic area, and Mexico (Latin America) the greatest number of organic farms worldwide. One of the most valuable benefits of organic farming is the improvement in soil quality, which can be expressed in terms of chemical, physical and biological properties and their interactions. In this article, we will discuss the properties, regulations and impacts of organic farming on human livelihood and the environment.

Overview of organic farming

Organic farming has expanded rapidly in recent years and is seen as a sustainable alternative to chemical-based agricultural systems. Its annual growth rate has been about 20% for the last decade accounting for over 31 million hectares (ha) and generating over 26 billion US dollars in annual trade worldwide. Nutrient management in organic farming systems is often based on soil fertility building via nitrogen (N) fixation and nutrient recycling of organic materials, such as farmyard manure and crop residues, with limited inputs from permitted fertilizers. Although organic farming has been criticized for relying on the build-up of soil phosphorus (P) and potassium (K) by past fertilization before converting to organic, its acceptance and popularity are growing due mostly to environmental and health related concerns. A recent polling of residents of Ontario, Canada reveals that more than half think organic food is more nutritious; two-thirds believe organic food is safer than conventionally grown food; and 9 out of 10

believe organic fruits and vegetables are grown without pesticides of any kind.

The aims and principles of organic farming, as presented in the International Federation of Organic Agriculture Movements (IFOAM) Basic Standards for production and processing A shift to organic agriculture brings about significant changes: restricted use of synthetic fertilizers and pesticides, increases of other inputs such as organic materials, labor, perhaps machinery, cultural practices (e.g., crop rotation), and better knowledge of biological processes. These changes have serious implications. Thus, farmers should consider the following issues before practicing organics.

The principal aims of organic production and processing

- * To produce food of high quality in sufficient quality.
- * To interact in a constructive and life enhancing way with natural systems and cycles.
- * To consider the wider social and ecological impact of the organic production and processing system.
- * To minimize all forms of pollution.
- * To process organic products using renewable resources.
- * To produce textiles which are long lasting and good quality.
- * To develop a valuable and sustainable aquatic ecosystems.
- * To produce fully biodegradable organic products.
- * To maintain and increase long-term fertility of soil.
- * To give all livestock conditions of life with due consideration of the basics aspects of their innate behaviour.

Labor inputs

Labor is important to the production process, and can be an impediment to the adoption of organic agriculture. Compared to large-scale mechanized agricultural systems, organic farming appears more labor intensive. Many techniques used in organic farming

require significant labor (e.g., strip farming, non-chemical weeding, composting). In the developed world, labor scarcity and costs may deter farmers from adopting organic systems. This may also be true for cash-poor farmers and those supplementing their incomes with off-farm work. However, where labor is not a constraint, organic agriculture can provide

employment opportunities, especially in rural communities. Furthermore, the diversification of crops typically found on organic farms, with their various planting and harvesting schedules, may result in more work opportunities for women and a more evenly distributed labor demand which helps stabilize employment.



Crop rotation

This operation is required under organic certification programs and is considered essential in organic management. Agricultural pests are often specific to the host (i.e., a particular crop), and will multiply as long as the crop is there. Alternating crops in time (rotations) or space (stripcropping and intercropping) is therefore an important tool for controlling pests, and also for maintaining

soil fertility. As the use of synthetic fertilizers and pesticides allows the farmer to grow the crop that is financially most rewarding, not using those inputs may limit the choice of crops. The success of an organic farm depends on the identification of end-uses and/or markets for all the crops in the rotation, as few farmers can afford to leave fields fallow. This remains one of the most significant challenges in organic agriculture.



CROP ROTATION

Yield

Yields on organic farms, although may not be as high as those produced by conventional practices, fall within an acceptable range. Encouragingly, organically produced yields currently are significantly higher than those produced before the 1950s. Part of this progress can be attributed to new varieties and better knowledge of biological processes used in farming. For example, if N mineralization is slow because of cool/wet growing-conditions, crops on organic farms may not have sufficient N early in the season. However, better knowledge on N synchronization between N release by manures and N demand by crops could minimize or even eliminate this N deficiency problem.

CONCLUSION

The organic food movement apparently had its roots in a philosophy of life, beginning perhaps with Rudolf Steiner, a notable German thinker, in the 1920s. One of its common beliefs is that natural products are good, whereas man-made chemicals are not, or at least not as good as natural ones. This partially explains why organic farming avoids the use of synthetic fertilizers and pesticides. Certainly, organic farming has many benefits ranging from reduced environmental pollution to increased soil quality. Let us hope that organic farming will lead all farmers, and their consumers, toward a more productive, prosperous, sustainable, and healthy future.