

Opinion Article

Management of nutrient and manures in organic farming

Anthony Kovic*

Department of Agriculture and Food Sciences, University of Udine, Udine, Italy.

Received: 09-Feb-2023, Manuscript No. AAB-23-91135; Editor assigned: 13-Feb-2023, Pre QC No: AAB-23-91135 (PQ); Reviewed: 01-Mar-2023, QC No: AAB-23-91135; Revised: 07-Mar-2023, Manuscript No: AAB-23-91135 (R); Published: 14-Mar-2023

ABOUT THE STUDY

The "organic farming" is a cultivation technique, which reduces the use of synthetically manufactured fertilizers, herbicides, growth regulators, genetically modified organisms, and supplements to feed livestock. Crop rotations, the use of crop residues, animal manures, legumes, green manures, off-farm organic wastes, bio-fertilizers, mechanical cultivation, nutrient rocks, and aspects of biological control are all implemented to the maximum extent feasible in organic farming systems to maintain soil productivity and soil structure, supply plant nutrients, and control insects, weeds, and other pest infestations.

If organic farming practices integrate themselves in production, certification, and marketing, they can improve farm productivity, repair generations of environmental harm, and connect small farm families to more sustainable distribution networks, improving food security.

Over the recent years, a rising number of farmers have shown a shortage of commitment in their work, and many of those who once cultivated are migrating to other regions. One method of promoting either self-sufficiency or food security is through organic farming. The land and water are severely polluted by the extensive use of hazardous pesticides and fertilizers. It has severe environmental repercussions, such as topsoil loss, decreased soil fertility, contaminated surface and ground water, and reproductive diversity loss. So, it is essential to implement organic farming, a comprehensive system of production management that supports and enhances the health of agro ecosystems, including biodiversity, biological cycles, and soil biological activity. Several studies have demonstrated that organic farming techniques can result in even higher yields than traditional ones. It is also possible to observe a significant difference in the soil health markers, such as the potential for nitrogen mineralization and the variety and abundance of microbial life, which were greater in the organic crops. The incidence of insects and diseases was drastically decreased in organic farms due to the improved soil health. The development of small-scale integrated farming systems has the possibility of improving the economics of rural communities.

Management of nutrients

Maintaining a stable soil that is rich in organic matter and provides all the nutrients the plants require is essential in organic

farming. To improve soil fertility, a number of methods can be employed, including green manuring, applying manures and bio-fertilizers, etc. These organic resources not only provide the soil with various nutrients but also assist in weed control and enhance soil organic matter that feeds soil microorganisms. Elevated concentrations of organic matter in the soil prevent soil erosion, improve the water retention, and reduce irrigation needs. Additionally, it's possible to add some natural minerals that the plants absorb for development and to improve the integrity of the soil. To change the pH balance of the soil, soil amendments like lime are introduced. Moreover, there should be a minimum amount of heavy metals in water and soil amendment. The majority of the natural manure is made from recycled waste by products from other sectors. Farmers also produce compost from animal manures and mushroom compost. Compost is heated and stored for at least two months, attaining and maintaining an internal temperature of 130°F-140°F to eradicate unwanted bacteria and weed seeds before it can be spread to the fields. Depending on accessibility and crop suitability, a variety of organic fertilizers, additives, and bacterial and fungal bio-fertilizers can be utilized in organic farming.

Organic manures

Farm Yard Manure (FYM), vermicompost, and other widely used fertilizers are generally low in nutrients, so substantial amounts are required to satisfy crop nutrient needs. So, partly due to the nation's substantial usage of cow dung in power generation, most developing nations, including India, do not have availability to enough organic manures to meet crop requirements. Sesbania, cowpea, mung bean, and other green manures are very good at increasing the amount of organic matter in the soil. So, due to intense cropping and socioeconomic factors, the use of green manuring has reduced over the past few decades. Some few inorganic sources of plant nutrients, such as rock phosphate, basic slag, rock potash, etc., have been approved for use in organic farming systems by the International Federation of Organic Agriculture Movement (IFOAM) and Codex Alimentarius in recognition of these restrictions. These compounds, which may be of botanical, animal, microbial, or mineral origin and may have experienced physical, enzymatic, or microbiological processes, can supply essential nutrients, and their use won't have any adverse effects on food or the environment, including soil microorganisms.

*Corresponding author: Anthony Kovic, Email: anthonkovic@gmail.com