

Technology of crop rotation in soil improvement.

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Abstract

A method of cultivating different kinds of crops in repeated succession on the same land is referred to as crop rotation. Crop rotation has a number of additional economic and environmental advantages. Crop rotation is also beneficial for long-term soil and farm management. Crop rotation can disrupt insect life cycles and enrich the soil with additional nutrients. Crop rotations increase soil fertility, protect the environment, eradicate weeds, diseases, and pests, and increase the variety of crops and markets.

Keywords: Crops, Soil fertility, Weeds, Pests.

Introduction

Crop rotation is the practise of growing a different crop on a specific plot of land each growing/planting season. Rotating crops is done for a variety of reasons, but one of them is to disrupt the cycles of disease and pests. Crops are rotated for a particular land area either seasonally or annually in several parts of the world where traditional agriculture is practised. However, monoculture of crops is frequently the standard for CAPS in various regions of the world [1].

Crop rotation, where a series of crops are rotated with grasses or legumes every season to generate a diversified system to improve soil biodiversity and physical structure, is a crucial part of CA systems. Crop rotation has extra advantages for soil health processes such as aggregation in addition to its effects on lowering weed, disease, and insect issues. The emergence of soil aggregates reflects the diversity of the root system, which fosters a diverse microbial community [2].

Crop rotation involves alternately producing different plant species in a certain location every year, every two years, or every three years. With the production of just one crop (or crops from a single family) over the course of several agricultural cycles, it is common for pests and illnesses to accumulate as well as for the soil to get exhausted. This diverse production approach avoids these problems. To keep the balance of nutrients in the soil, the rotation sequence is designed so that the needs of one crop complement those of the following. In specifically, this method is used to plant and collect green manures to supplement the production of goods for sale or internal consumption [3].

Every type of crop needs a specific combination of minerals to grow, and when planted constantly, the same nutrients are drawn from the soil each year. Another issue is the excessive buildup of minerals that the plant either doesn't require or

discharges. Monoculture, often known as monocropping, refers to the ongoing cultivation of one species. The aim to maximise production with the least amount of effort is the main justification for choosing it. Nevertheless, multiple studies and first-hand farming knowledge demonstrate that ongoing monoculture invariably results in a fall in yields because nutrient depletion and imbalance happen more quickly in this situation [4].

Farmers have been using crop rotation as a farming technique since the first century BC. Crop rotation is the deliberate planting of various crop varieties in various fields and at various seasons successively. It also involves deciding not to plant anything at all during a specific season and letting the land rest until the following one. As is typical in conventional farming, if a farmer plants the same crop in the same location every year, she will recurrently extract the same nutrients from the soil. Since their favourite food source is always present, pests and illnesses happily establish a permanent residence. These monocultures necessitate higher concentrations of chemical fertilisers and pesticides to maintain high yields while keeping pests and disease at bay [5].

Conclusion

Crop rotation boosts the yield from just one seasonal harvest. Because numerous crop varieties are used, one receives a general bountiful harvest in addition to a diversity of crops at the end of each season. According to some scientific research, crop yields in crop rotation as opposed to monoculture can increase by 10% to 25%.

References

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