

## Green Manuring and Its Benefits

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**G**reen manuring is an important agricultural practice used to improve soil fertility and sustainability. It involves growing specific crops (mostly legumes) and incorporating them into the soil while they are still green and tender. These crops are not harvested; instead, they are ploughed back into the soil to enrich it with organic matter and nutrients.

This method has been practiced since ancient times and is now gaining renewed importance due to the increasing demand for eco-friendly farming practices. Green manuring is widely used in organic farming and plays a vital role in reducing dependence on chemical fertilizers. It is especially beneficial in rainfed and low-input agricultural systems.

### What is Green Manuring?

Green manuring is the process of growing fast-growing plants and incorporating them into the soil before flowering. These plants decompose and release nutrients, thereby improving the physical, chemical, and biological properties of the soil.

Green manure crops are mainly selected because they grow rapidly and produce a large amount of biomass.

### Types of Green Manuring

**1. In-situ Green Manuring:** Crops are grown and incorporated in the same field.

**2. Ex-situ Green Manuring:** Plant materials are collected from other locations and added to the soil.



### Benefits of Green

#### Manuring

- 1. Improves Soil Fertility:** Green manure crops, especially legumes, fix atmospheric nitrogen and enrich the soil, reducing the need for chemical fertilizers.
- 2. Adds Organic Matter:** Decomposition of green plants increases organic matter content, improving soil health and productivity.
- 3. Enhances Soil Structure:** Improves soil texture, aeration, and aggregation, resulting in better root growth and soil stability.
- 4. Increases Water Holding Capacity:** Added organic matter enhances the soil's ability to retain

moisture, which is beneficial in dry and rainfed areas.

5. **Controls Soil Erosion:** Crop cover protects the soil surface from erosion caused by wind and water.
6. **Suppresses Weeds:** Dense growth of green manure crops reduces weed growth by limiting sunlight and nutrient availability.
7. **Improves Microbial Activity:** Decomposing plant material supports beneficial microorganisms and enhances nutrient cycling.
8. **Prevents Nutrient Loss:** Green manure crops absorb nutrients from deeper layers and reduce leaching losses.

## References

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9. **Enhances Crop Yield:** Improved soil fertility and structure lead to better crop growth and yield (up to 15–20% increase in some cases).

10. **Eco-friendly and Cost-effective:** Reduces dependency on chemical fertilizers, making farming sustainable and economical.

## Conclusion

Green manuring is a simple, cost-effective, and environmentally friendly agricultural practice that enhances soil fertility, structure, and productivity. It plays a crucial role in sustainable agriculture by reducing chemical inputs and improving soil health. Farmers adopting green manuring can achieve long-term benefits such as higher crop yields, improved soil quality, and reduced production costs.

