Krishi Netra
ISSN : 3048-5207

"Green Manure Crops: A Natural Way to Improve Soil and Yields"

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Manuscript No: KN-V4-02/005

The Current Situation

- Currently, farmers are using excessive amounts of chemical fertilizers to achieve high yields, while completely neglecting organic fertilizers.
- Consequently, crop yields are not increasing; instead, the balance of nutrients in the soil is damaged, turning crop lands infertile.
- To overcome this and achieve sustainable yields, it is essential to use fertilizers based on soil testing and incorporate organic fertilizers into nutrient management.
- With the availability of organic fertilizers like farmyard manure and vermicompost decreasing recently, farmers should make green manure crops a part of their cropping pattern.

Key Benefits

- Cultivating green manure crops offers many benefits, including the improvement of the soil's physical, chemical, and biological characteristics.
- It allows for the provision of large quantities of organic matter to the soil at a low cost, increasing the soil's ability to retain water and nutrients, and making the soil friable (loose).
- Aeration increases, and the drainage system improves; additionally, the organic matter boosts microbial growth, triggering biochemical reactions that make previously unavailable nutrients available to plants.
- The recommended Nitrogen dosage for crops can be reduced by up to 25%.
- If leguminous crops are selected, they fix atmospheric nitrogen through root nodules.

Types of Green Manure Crops and Their Characteristics

1. Jeeluga (Dhaincha/Sesbania)

- **Suitability:** Suitable for saline soils, paddy fields, and light sandy soils.
- **Features:** It has extensive root nodules which help stabilize nitrogen.
- **Cultivation**: Requires 12-15 kg of seed per acre. Ploughing it into the soil at the flowering stage yields 8 to 10 tons of green manure per acre.

2. Janumu (Sun Hemp)

- **Suitability:** Can be cultivated in all types of soils.
- **Features:** Useful as both green manure and fodder.
- **Cultivation:** 12-15 kg of seed should be sown per acre. It yields approximately 4 to 6 tons of green manure per acre.

3. Pillipesara (Green Gram/Wild Indigo)

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- **Suitability:** Can be grown in all soil types but is not suitable for saline lands.
- **Features:** Useful as fodder.
- **Cultivation:** 6-8 kg of seed should be sown per acre.
- **Nutrient Value:** It yields about 4 to 6 tons of green manure per acre; one ton contains approximately 7 kg of Nitrogen, 1 kg of Phosphorus, and 5-6 kg of Potash.

4. Pesara (Green Gram/Moong)

- **Cultivation:** Seeds can be sown with early rains; after harvesting the pods, the remaining plant biomass can be ploughed into the soil.
- **Usage:** If harvesting is not possible, the whole crop can be used as green manure; it is also useful as fodder.

5. Alasanda (Cowpea)

- **Usage:** Can be used as green manure and cattle feed.
- **Cultivation:** Requires 10-12 kg of seed per acre and is capable of withstanding water stress.

Cultivation and Ploughing Guidelines

- **Duration:** The crop duration for green manure is generally 60-70 days.
- **Planning:** Farmers should cultivate green manure crops when there is a gap of at least 60 days before sowing the main crop, depending on available resources and crop patterns.
- **Incorporation:** If there is a 60-day window, the crop should be ploughed into the soil at the flowering stage (around 45-50 days) and left to decompose for 10-15 days.
- **Decomposition:** This process converts the biomass into organic matter, making nutrients available for the subsequent crop.
- **Timing:** Ploughing at the correct time during the flowering stage ensures quick decomposition and increases soil fertility.
- **Result:** This practice allows for a reduction in chemical fertilizer usage by up to 25% for the following crops and helps achieve sustainable yields.

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