

## Importance and uses of green manuring in field crops

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Green manuring may be defined as a practice of ploughing or turning into the soil undecomposed green plants or their residue for the purpose of improving physical structure and fertility of a soil. There are various types of green manures in India like dhaincha, glyricida other leguminous crops etc. non leguminous crops Buck wheat, wheat, maize, sun flower etc. leguminous crops containing different microorganisms which can fix nitrogen to improve the soil fertility and hence plant growth.

**Methodds of green manuring :** The practice of green manuring is performed in different ways according to suitable soil and climatic conditions of particular area. Broadly the practice of green manuring in India can be divided into two types-Greenmanuring in situ and green manuring by collecting green leaves and twigs from some other places.

**Green manuring in situ:** It can be defined as a system by which green manure crops are grown and incorporated into the soil of the same field that is to be green manured, either as a pure crop or an intercrop with main crop. Common green manure crops in this system sunhemp (*Crotalaria juncea*) dhaincha (*Sesbania aculeate* and *Sesbania rostrata*), guar (*Cyamopsis tetragonoloba*), etc.

The following character has been essential for the green manures in situ method :

- Their crops was legumes in which plant roots enough no.in make nodules which are fix nitrogen.
- Water requirement is minimum for the crops.
- Poor and onuses soil on good growth.
- Grow in any soil and no produce toxicity effect.

**Green manuring through collection of green plant tissues from other places:**It refers to turning into the soil green leaves and tender green twigs collected from outside the field to be green manured. The common green manure crops, are Glyricidia (*Glyricidia maculate*), Karanja (*Pongamia pinnata*) etc.

**Advantages of green manuring:** There are various advantages of green manuring in relation to soil fertility which are as follows:

- It increases the organic matter regime of the soil and there by modifies soil physical ,chemical and biological environments. In fact, this stimulates the activity of soil micro-organisms.
- The green manure crops help for returning the different plant nutrients to the surface soil layer from the sub-surface soil layer.
- It improves the soil structure, aeration status, permeability and infiltration capacity of soil.
- It reduces the soil loss caused by run-off and erosion.
- Due to green manuring the nutrient regimes can be improved and restored otherwise be lost by leaching.
- Green manure crops have some residual effect in relation to supply of different plant nutrient and thereby it helps for the better growth to the next crop.

**Disadvantages of green manuring:** The adoption of green manuring in a improper way and application or incorporation of green manure crops without proper soil and water management leads to the following deleterious effects:

- Under rainfed conditions where rainfall is limiting, the proper decomposition of the green manure crops may not take place and thereby benefits of green manuring may not be achieved satisfactorily.
- Sometimes the cost of green manuring crops may be more than that of chemical nitrogenous fertilizers and in that situation green manuring may not be economical.
- There is a change of occuring diseases and insects in the field crops.

Due to decomposition of green manure crops, various toxic substances like organic acids e.g. butyric acid, propionic acid etc. and toxic gases like methane (CH<sub>4</sub>) and others etc .

### Some importance crops is green manure

Name	Botanical name	Season	Average yield (kg/ha)	N %	N in soil (kg/ha)
Sunhemp	<i>Crotalaria juncea</i>	Kharif	212	0.43	75.0
Sesbania	<i>Sesbania aculeata</i>	Kharif	200	0.42	68.9
	<i>Vignamungo</i>	Kharif	150	0.49	50.3
	<i>Trifolium alexandrinum</i>	Rabi	155	0.43	54.2

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