

Before the availability of fertilizer, farming was done through organic manures but with the origin of Green Revolution, excessive use of urea was started. Use of nitrogenous fertilizer started first but slowly use of phosphatic and potassium fertilizer started due to which nutritive elements such as Magnesium, Sulphur, Zinc, Iron, Copper, Magnese, Molybdenum, Boron and Chlorine absorbed from the soil started continuously declining and the plants could not get these elements in required quantity. As a result, the production became stagnant in almost all the regions and it declined in some areas also. Organic matter of the soil also declined as a result, physical, chemical and biological activities also changed. Soil fertility should be balanced in such a way that the plant could get essential nutrients as per their requirement and due production of the crop can be obtained and soil health can be saved. For this, appropriate mixture of organic and inorganic sources is essential. This technique is name as Integrated Nutritive Element Management.

### **Suggestions for Integrated Nutritive Element Management**

- Use fertilizers and organic manures on the basis of soil testing report.
- Rhizobium culture must be used in pulse crop.
- Use green manure of dhaincha in paddy and whet crop cycle.
- Rotate crop cycle.
- Prepare compost by dung and waste material as per availability
- Mix the crop residue organic matter of the field in the soil.
- Use bacterial, algal and fungal bio fertilizers help in making different types of bio fertilizer viz, nitrogen synthesis and phosphate soluble.

### **Nutritive Elements of Organic Manures and Bio fertilizers equivalent to Fertilizers**

<b>Material</b>	<b>Quantity of Inputs</b>	<b>Equivalent quantity of nutritive elements in the form of Fertilizers</b>
A) Organic manure/ Crop residue dung manure	Per Tonne	3.6 kg Nitrogen, phosphorus(P <sub>2</sub> O <sub>5</sub> )+ Potash (K <sub>2</sub> O) (2:1:1)
Green manure of dhaincha	45 day crop	50-60 kg Nitrogen (in dwarf paddy)
sugarcane bagasse	5 tonnes per hectare	12 kg nitrogen per tonne
Dhaan kee Puaal + Eichhornia	5 tonnes per hectare	2 kg nitrogen per tonne
B) Biofertilizer Rhizobium Culture		19-22 kg nitrogen
Agotobacter and Culture Agospherilum		20 kg Nitrogen
Neel Green Algae	10 kg per hectare	20-30 kg nitrogen
Ajola Firm	6-21 tons per hectare	3-5 kg / ha