

INTEGRATED NUTRIENT MANAGEMENT: NEED OF HOUR

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INM includes the intelligent use of inorganic, organic and biological resources so as to sustain optimum yields, improve or maintain the soil chemical, physical and biological properties and provides crop nutrient packages which are technically sound, economically attractive, practically feasible and environmentally safe. The main principle aim of the INM is to utilize all the sources of plant nutrition in a judicious and efficient manner.

Integration of components:

Achievements:

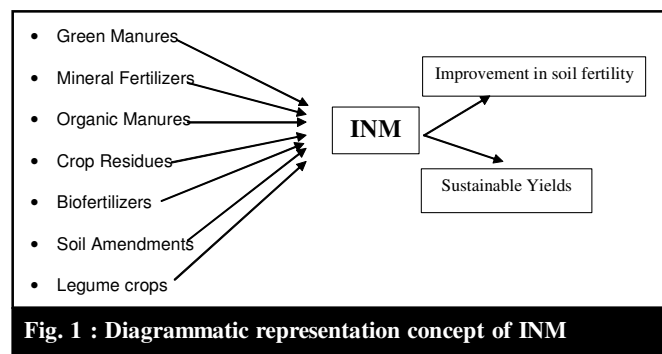


Fig. 1 : Diagrammatic representation concept of INM

Why INM?:

Due to following reasons there is need of INM concept in agriculture to maintain soil fertility and to boost crop yields.

- Availability of no more land for cultivation.
- Excavating cost of chemical fertilizers.
- Unavailability of fertilizers as per requirements.
- Continuous depletion of soil nutrients.
- Environmental pollution and ill effects of chemical fertilizer.

Objectives: To maintain fertility and physico-chemical properties of soil.

- To recycle and use organic wastes.
- To encourage judicious use of all resources.
- To avoid over exploitation of natural resources.
- Creation of positive nutrient balance in soil.
- Maximization of nutrient use efficiency.
- To reduce environmental pollution.
- To promote sustainable agriculture.
- To supply balanced nutrients.

Components of INM: Crop requires all the essential nutrients for its complete growth and reproduction. In crop production various sources are used to supply plant

nutrients. No individual source of nutrient can supply all the nutrient requirements of crop plants. Hence, various sources of nutrients are integrated in balanced proportion in INM systems. These various/components are categorized as major and minor as follows:

Major:

- Soil
- Chemical/ Mineral fertilizers
- Organic manures
- Biofertilizers

Minor:

- Recycling of crop residues
- Legumes in crop rotation
- Green manuring
- Biogas slurry
- Agro. Industrial and animal waste
- Soil amendments (Gypsum, Pyrites, Rock phosphate, Dolomite etc.)

Importance: At present there is large gap between demand and supply of chemical fertilizers. To meet this gap Govt. has to waste valuable foreign currency in importing chemical fertilizers. The cost of chemical fertilizers are escalating every year due to which farmers has to spend lot of money on purchasing fertilizers and this has led to increase the cost of production. Due to imbalanced use of fertilizers there is deficiency of many essential elements in the soil, which has led to poor soil health and low and fluctuating crop yields. In the 21st century there is need to increase agriculture production to maintain national food security and nutritional security of common people. Hence there is great importance to the concept of integrated nutrient management system for meeting the challenges of 21st century.

Steps: To implement INM system one has to follow certain steps, these steps are as follows:

- To assess on farm and off farm resources availability of farmers by PDCO (Participatory Diagnosis of Constraints and Opportunities).
- Fixing of yield targets depending on the resources.
- Soil test based estimation of nutrient requirements.
- Integration of all nutrient resources to finalize

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