INTERACTIVE MEET WITH COMPO (20-3-14)

-**Comparison b/w Ammonical form and nitrate form of Nitrogen:-** Ammonical form (NH4+) reduces pH in rhizosphere & Nitrate form (NO3-) increases it. Slightly acidic pH around rhizosphere increases availability of P, Fe, Zn, Cu and other trace elements to plants.

-Si application to plants makes them resistant to pests and diseases.

-Color development of tomato is better when N is applied in Ammonical form not nitrate.

-Nitrate in leaves makes oxalates which are harmful for human consumption. Ex- They when react with Ca, form Kidney stone.

-DMPP:- 3,4- Dimethyl Pyrazole Phosphate, is nitrification inhibitor.

-**In plants starting from roots, these transformations take place**:- Nitrate-Nitrite-Ammonium-Amino acids-Protein. This process requires 20 ATP energy and when plants are given directly with Ammonical N this process requires only 5 ATP. Thus, when plants are given N directly in Ammonical form saves 15 ATP (energy) of plants which can be harnessed for better flowering and fruiting.

-Amino acids are produced in leaves & when becomes surplus comes down to roots. By using Novatec, ammonical form are available to plants in roots and produces AA/protein in roots, resulting in better root growth.

-**Auxins Cytokinins**

Cell elongation Cell division/size

Growth, branching and adventitious roots. Decay prevention.

Stimulates growth of flower parts. Bud formation and release from apical dominance.

Leaves produce auxins. Roots produce cytokinins.

**-Foliar application of fertilizers:-**

1. Large molecules /highly charged molecules are not absorbed easily by leaves. Ex- Urea has no charge and is thus best for foliar application.
2. Only 100% water soluble fertilizers are given as foliar spray.
3. More frequencies of medium concentrated foliar application gives best results and reduce chances of burning.
4. Use of adjuants (organo silicates) reduce the efficacy of fertilizers.
5. pH around 6.5 of foliar solution makes max. Micronutrients available to plant.
6. Best time of foliar application is when stomatas are open i.e, early morning and evening.
7. Sprayer should be thoroughly washed before fertilizer application.

-**Chillating agents:-** Chillating agents are compounds used in agricultural applications. These may be:-

1. **Synthetic chillating agents:-** Ex- EDTA, EDDHA etc.

EDTA:-

**Advantages Disadvantages**

1. Chillates are very stable upto pH 8. 1. It is synthetic, not synthesised by plants.
2. It is very resistant to microbial degradation. 2. Synthetic chillating agents may compete with

Plants for minerals.

EDDHA:- It may work upto pH 10-11 and is expensive than EDTA.

1. **Lignosulfonates (produced from wood):-**

**Advantages Disadvantages**

1. Cheap to produce. a. It is too big for foliar application.
2. It is bio-degradable.
3. **Humic or fulvic acid:-**

**Advantages Disadvantages**

* 1. Soil application is very cost effective. a. Molecules are too big for foliar application.

1. **Organic acids (have negative charge):-**

**Advantages Disadvantages**

* + - * 1. Are natural compounds. a. Are expensive.
        2. They make mineral uptake more effective

By beutralising the charge. Like- Ca.

1. **Amino-acids:-**

**Advantages Disadvantages**

Are natural carriers. a. Enzymatically hydrolised protein are expensive to produce

Make plant nutrient uptake more effective. b. Can cause phyto-toxicity due to excessive uptake.

-As compared to sulphate compounds, ex- MnSO4, EDTA compounds are less absorbed by plant in leaf but translocation of nutrients is better in EDTA than Sulphate.

-Fetrilon combi-2 is best soluble due to raspberry molecule shape. Also, it reduces pH and makes solution suitable for foliar application.

-Fetrilon combi-2 increases sweetness in guava.