

## **Slow release/ Specialty Fertilizer Project**

Plants need sixteen elements for growth, out of which they get Carbon, Hydrogen and Oxygen directly from air and water.

Nitrogen, Phosphorus and Potash (NPK) are primary elements for growth and developments of the plants. Farmers provide primary nutrients by using fertilizer like Urea, DAP and mixed fertilizers.

Calcium, Magnesium and Sulphur are called secondary nutrients, their requirement is small compared to NPK. For getting more production, healthy and disease free plant, secondary and micronutrients like Copper, Zinc, Iron, Boron, Manganese, etc are also necessary. Plants get these secondary and micronutrients from the soil. Wherever the soil is deficient in the secondary and micronutrients, necessary additions have to be made.

Another important factor for plant growth is soil health. The condition of soil should be conducive to making the nutrients available to the plant. One of the main requirements of healthy soil is organic matter in the soil that encourages microbiological activity rendering the soil that much, richer & healthier. It prevents loss of nutrients through leaching or denitrification and prevents the crop from the toxic damage of excess ammonia.

Use of farmyard manure as source of organic matter and some nutrients is well known. Research and development over the years has resulted in a number innovative materials and methods to increase soil health and plant growth.

Organic fertilizers, bio fertilizers, plant growth stimulants etc are the new products being used for obtaining increased yields and protecting soil health. Controlled release fertilizers (mainly for nitrogen) have been developed to minimize wastage. Feeding nutrients during irrigation (mainly drip irrigation) and foliar sprays has come up to provide quick response correction of deficiencies.

Availability of different materials, application techniques, soil specific and crop specific regimens for nutrient application has resulted in many niche areas for manufacture and marketing of plant nutrients.

### **PROPOSAL**

Number of small/medium units has been set up to manufacture bio fertilizers, micronutrients and other products. Considering the large and growing market there is ample scope for few more units.

### **PRODUCT MIX**

1. Controlled release urea for horticulture and other niche areas – 6000 Tons per year
2. Biofertilizers comprising of nitrogen fixing agents, phosphate solubilizing agents and Rhizobium cultures --- 600 Tons per year
3. High value additives for organic fertilizers like Humic acid, protein hydrolysates --- 3000 Tons per year
4. Secondary nutrients and micronutrients and plant growth regulators. -- 6000 Tons per year

## **Manufacturing process**

Bio fertilizers are made by fermentation process. Controlled release fertilizers are made by coating urea with suitable coating agent.

Well-proven technologies for all the products are available.

## **Plant and Machinery**

The main plant and machinery consists of fermentors, filters, dryers, pulverizes mixers and packaging machinery. A well-equipped laboratory is the basic necessity

**Raw materials:** Main raw materials are fermentation media, Urea, sulphur, lime, dolime etc. All the raw materials are available.

**Utilities:** Fuel & Power requirements are moderate.

## **Project cost**

Land and buildings	Rs 150 lacs
Plant and machinery	Rs 750 lacs
Know-how and engineering	Rs 100 lacs
Working Capital margin	Rs 400 lacs
Marketing expenses	Rs 100 lacs
Total	Rs 1500 lacs

## **Turnover and profitability**

Turn over of Rs 60 crores with 6 to 8 % net profit margins can be expected. It may take about three years to achieve optimum production levels

## **Suggested location**

Near Hyderabad

## **Strategy/ options**

This project is recommended to entrepreneurs as a start up project. The main challenge is marketing. Tie up with large fertilizer companies is one possibility. If own marketing is proposed project investment of 50 crores and above may be considered

## **Consultancy from APITCO**

**Sourcing technology. Selection of plant and machinery. Market study. Detailed project report preparation.**