

### **MANDATE**

To enhance the productivity, soil and crop quality and supplement a part of the chemical fertilizer needs of crops through exploiting the soil biodiversity extant, for Biofertilizers in diverse cropping systems and agro-ecological zones in India, improve Biofertilizer technology and extend the Biofertilizer applications to disadvantaged areas.

### **SIGNIFICANT ACHIEVEMENTS**

- Soil Metagenomic analysis showed greater eubacterial richness, diversity and functional genes in organic farming soils.
- Rice root microbiome showed *Bradyrhizobium* when rice was grown with legumes.
- Rhizobial diversity characterized in arid lands by cultural and genomic approaches.
- Proteomics of rhizobia done for characterizing genes for acid tolerance.
- PGPR for wheat, seabuckthorn and apricot identified.
- New species of Parapodobacter reported from HCH dumpsite.
- *Frankia* isolated from alders and *Arthrobacter* from Vertisols.
- Promising mycorrhiza identified in AP.
- Biofertilizers packages-fluorescent pseudomonads, zinc solubilising bacteria, actinomycetes; for organic rice, upland rice, tropical and temperate vegetables and Jute devised.
- Post planting Biofertilizer application technique standardized.
- Biofertilizer Demonstration done in tribal areas.
- Biofertilizer production by centres amounted to 163 lakhs giving 88% return on investment.

### **FIVE BEST TECHNOLOGIES/PRODUCTS**

- Biofertilizers for improving nutrient use efficiency and crop quality
- Microbial Consortium for Rice in Eastern India
- Microbially enriched compost in NEH region
- PGPR for biocontrol of root rot of apple
- Liquid Biofertilizer technology

### **NEW INITIATIVE**

Intensification of biofertilizers in tribal areas of Wayanad and Palghat districts by the newly established centre at KAU at Trichur and Vellayani. New work on rhizobia for the important legumes in hilly regions, particularly *Phaseolus* sp ('Rajmash') through new voluntary centre established at GBPUAT Pantnagar.

### **COLLABORATIVE PARTNERS**

There are 18 centres of the project in state agricultural universities and ICAR institutes. For testing cultures and technology demonstration there is collaboration with state departments of agriculture and KVK's, several AICRP's of NRM and Crops Division. With MoA and RCOF for formulation of standards.

### **THRUST AREAS FOR XII PLAN**

- Genetic Diversity of Rhizobia in Indian Soils
- Soil Genomics for Assessing Soil Microbial Health
- Microbial Diversity and Biofertilizers in Eastern India
- Improvement of Biofertilizer Technology
- Dissemination of Biofertilizers for Disadvantaged areas (Tribals, NEH)

### **BUDGET**

11th Plan: Rs 776.74 lakhs  
 12th Plan sanction: Rs 1763.65 lakhs  
 Released so far: Rs 605 lakhs (2012-13, 13-14 and 14-15) Expenditure 100%  
 BE 2015-16 (Plan): Rs 305 lakhs (non-plan:nil)

- Project Workshop held in DGR, Junagadh, Dec 2012, Biennial Report 2012-14 and six bulletins released.
- QRT for 2007-12 completed along with Institute QRT.

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