## Title of project:

**Production and manufacturing of biofertilizeres**

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**Summary :**

Fertilizers divided into two main classes macronutrients( N, P, K, Ca, S) and micronutrients ( Zn, Mn, B, Fe, Mo) our soils storage a great storage for these elements in insoluble forms, There are a number of useful soil microorganisms which can help plants to absorb nutrients such as(bacteria and fungi) Their utility can be enhanced with human intervention by selecting efficient organisms, culturing them and adding them to soils directly or through seeds. Biofertilizers fix atmospheric nitrogen in the soil and root nodules of legume crops and make it available to the plant. They solubilize the insoluble forms of phosphates, potassium, iron into available forms. They scavenge these elements from soil layers. They produce hormones and anti metabolites which promote root growth They decompose organic matter and help in mineralization in soil. When applied to seed or soil, biofertilizers increase the availability of nutrients and improve the yield by 10 to 25% without adversely affecting the soil and environment.

**Procedure:**

1. Fertilizers is necessity for plants and with economic cost.
2. Mineral fertilizers causes many side effects on human and soils.
3. Biofertilizers very important from a healthiness and economical point of sight.
4. Selected efficient native microorganisms from fertile soils from different places in Kurdistan regions ( native source).
5. Isolation, identification and growth these isolates in suitable media and laboratory that equipped with diagnostic Devices.
6. Manufacturing methods, requires training courses inside and outside of country to develop employers and researchers in gene technology field.
7. Prepare teams to survey Kurdistan lands to getting useful strains, field Experiments, chemical and mineralogical analysis, application with economic plants, comparison of the yield with mineral fertilizers(chemical fertilizers).

**Introduction:**

Bioinoculants are the beneficial soil amendments that use microbes for promoting plant growth and development. They contain dormant or live cells of the efficient strain of nitrogen-fixing, phosphorous and potassium availability Hydrogen cyanide and siderophore producing microorganisms .The interactions between soil-borne microbes and the roots of higher plants play a significant role in plant development and growth by converting unavailable nutritional elements into available form Bioinoculants also help in seed treatment by forming a uniform coating of inoculant over seeds, bioremediation and induce systemic acquired resistance