Rhizogold[D] A Multi-Strain Biofertilizer to Mitigate Drought Stress in Cereals

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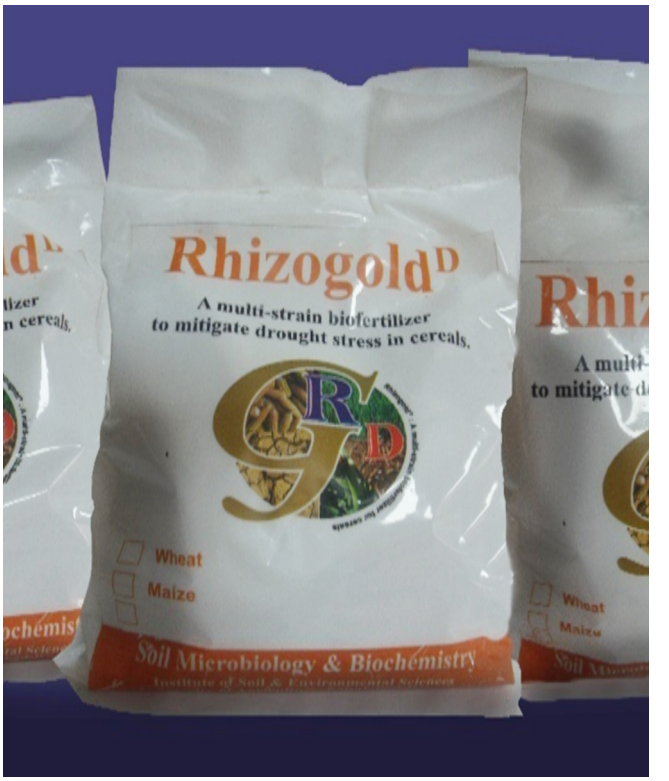
Rhizogold[D] (**RG[D]**) is an effective multi-strain biofertilizer to mitigate drought stress in cereals. **RG[D]** is developed from well characterized, proficient strains of bacteria, capable of inducing drought tolerance as well as plant growth promotion in cereals. This biofertilizer has been developed with an aim to devise an agro-biotechnology for the sustainable production of cereals in water scarce conditions.

Microbial strains with potential to be used as plant growth promoting rhizobacteria were isolated from the nodules of various leguminous crops/rhizosphere and were characterized in Soil Microbiology and Biochemistry Lab., Institute of Soil and Environmental Sciences, University of Agriculture, Faisalabad. Series of pot and field trials were conducted to establish competence of these strains to trim down adverse effects of drought in cereals. **RG[D]** alleviates drought in crops through increased proline contents, enhanced antioxidant levels in plants, improved photosynthetic activity and better water relations of plants. Beneficial traits of **RG[D]** such as auxin synthesis, root colonization, ACC-deaminase activity, exopolysaccharides production and phosphorous solubilizations have been proven to increase growth and production of cereals in drought stress.

Why Rhizogold^{D} is essential?



Hostile environmental conditions and stresses pose threats to healthy plant growth and yield. Water scarcity is the major abiotic stress which hinders crop growth and productivity. It is estimated that drought may reduce the plant growth and yield up to 50%. In Pakistan the conditions are even worse due to enormous increase in population, harsh climate, low precipitation rate and limited water resources. Therefore, cost effective and environment friendly approaches are needed for better crop production in drought affected areas. Rhizogold^{D} is the useful choice to cope with drought. This biofertilizer has initially been developed for two cereal crops i.e. wheat and maize but beneficial effects on subsequent legume of relevant group are also expected.

Specific Rhizogold^{D} can be used for specific crop i.e. wheat and maize. Microbial strains in **RG^{D}** colonize the rhizosphere to exert beneficial effects on plant growth and development by improving plant physiology and stress tolerance. Rhizogold^{D} would support farmer's economics by maximizing productivity, minimizing economic loss and protecting plants from the deleterious effects of drought stress. Recommended applications method for Rhizogold^{D} is seed coating.

Acknowledgment

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