## International Conference on APPLIED MICROBIOLOGY AND MICROBIAL BIOTECHNOLOGY &

## International Conference on MICROBIOME R&D AND BIOSTIMULANTS &

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## Biostimulants: An environment friendly way to achieve sustainable farming

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**Statement of the Problem:** Plant biostimulants comprise diverse array of beneficial microorganisms and/or natural active substances that have the ability to enhance plant growth by stimulating the plant's ability to assimilate nutrients, enhance stress tolerance and crop quality traits, regardless of their nutrient content. The natural active compounds which include protein hydrolysate, amino acids, humic substances, seaweed extracts target specific receptors and act by changing the physiology and biochemistry of the plant. Beneficial microorganism such as plant growth promoting bacteria and fungi enhance plant growth by either production of hormones such as gibberellins and auxins, by the production of a growth-promoting metabolite/removal of inhibitory toxic material from the soil and by providing minerals to the plants in a more accessible form. The increasing food demand can be met by following sustainable agricultural practices that guarantee greater yield. An environment-friendly way to achieve this is by exploiting biostimulant functions displayed these beneficial microorganisms and a product can be developed that is biodegradable and can serve as an alternative to synthetic plant stimulants.

**Methodology & Theoretical Orientation:** The primary screening of crude extract from endophytic fungal cultures was done using seed germination assay and the biostimulant effect of the treatments were measured by recording the enhancement in plant growth parameters.

**Findings:** Active cultures obtained increased the overall vigour of the plant in terms of increase in percentage germination and enhancement in root and shoot length as well as biomass. Conclusion and significance: Sustainable farming can be achieved by the use of environment friendly biostimulants in agricultural fields. Microorganisms' that display biostimulant functions activity can be developed as a commercial biostimulant that can reduce the use costly synthetic fertilizers and can act as an alternative to existing chemical fertilizers that degrade environment due to its toxic and non-biodegradable nature.

## **Biography**

Ashish is working as a Research Scholar on a project titled 'Biostimulants from endophytic fungi: A novel approach to sustainable farming'. His aim is to develop an environmentally friendly plant growth regulator from endophytic fungi that can enhance overall plant growth in terms of yield and plant vigour. The biostimulant developed from this work can replace existing chemical fertilizers used in agricultural fields and can promote sustainable farming.

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