

Project completion report MS. SADIA SIDDIQUI (Pakistan) under Research Training Fellowship for Developing country scientists programme in IFGTB, Coimbatore.

Ms. Sadia Siddiqui from Karachi, Pakistan has undertaken a project on 'Evaluation of *Fusarium verticilloides* strains isolated from different sources for economic production of Gibberellic Acid ' under the supervision of Dr. A. Karthikeyan, Scientist E, IFGTB, Coimbatore. She has undertaken this study for six months from 31.3.2014 to 29.9.2014 sponsored by NAM S & T centre, New Delhi. After successful completion she presented the project completion report in IFGTB on 29.9.2014. She stated that seven strains of *F. verticilloides* were isolated from various sources and multiplied in three different media using sub merged fermentation technique viz., Czapek-Dox Broth, Selective Medium of Fusarium which constitutes glucose, Potassium dihydrogen, Sodium Nitrite, Magnesium Sulphate, Yeast Extract, 1% FeSO₄.7H₂O, Agar and water and otherd medium constitutes Glucose, Ammonium Chloride and Rice flour to scale up the yield of GA₃ After multiplication the strains were analysed through HPLC with 1ml methanol,.70% of acetonitrile and 30% of HPLC water The smples were read at 254 nm and found the actual concentration of GA₃ in all strains. GA₃ is produced in potato dextrose broth in various ranges in this present study.

MTCC-156 (Chandigarh) produced 38 mg/L, NCIM-1099 (Pune) produced 18mg/l. The other five strains were isolated from different sources like sorghum, maize, rice which was named as C-6 which was isolated from sweet corn produced 52 mg/L, C-10 isolated from Baited Sorghum produced 45 mg/L,C-2 which was isolated from baited sweet corn produced 65 mg/L, C-9 produces isolated from Baited Sorghum 62 mg/L, C-11 isolated from rice produce from 80 mg/L. After analysing the data the highest strain which produces 80 mg/L isolated from rice and strain MTCC-156 which produce 38 mg/L was identified as superior strain. Under sub merged fermentation method three different media were prepared to induce the production GA₃, strain MTCC-156 produced 308 mg/L and C-11 produced 40 mg/Lin selective media of Fusarium. The Czapeck-Dox Broth was the third medium which was the most suitable medium for the production of GA₃ MTCC-156 produced 1700 mg/L and C-11 produced 170 mg/L. The invitro pathogenicity test showed that *F. verticilloides* strains 10599,156, C-2. C-6 and C9 showed positive control where as C-10 showed mycelial growth in GA₃ dissolved in ethyl acetate. The negative control was also observed in the C.11. Hence, it was found that the strain C-11 produced higher content of GA₃ and the Czpeck-Dox Broth is the suitable media for mass

multiplication of *F. verticilloides*. For economic production of GA₃ in large scale the strain C-11 and the media Czpeck-Dox Broth are the suitable agents as analysed in this study. The pathogenicity studies were also revealed that the strains are generally non pathogenic. In addition to that she has also accomplished the works of Molecular identification and Scanning electron microscopy studies on *F. verticilloides*

Sh. R.S. Prashanth IFS, Director of IFGTB presented the course completion certificate and congratulated Ms. Sadia Siddiqui on successful completion of the training course and wished her all the best in futurer carrier.



