A FIELD TRIAL TO STUDY THE EFFECT OF AZOSPIRILLUM BRASILENSE AND PSEUDOMONAS STRIATA AS INOCULANTS AND INSECTICIDE CARBOFURAN ON GROWTH PARAMETERS OF SORGHUM CROP

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Abstract: The field trial with inoculants *Azospirillum brasliense* and *Pseudomonas striata* and insecticide carbofuran showed significant increase in grain yield, there was significant decrease in dead heart formation with carbofuran. With application of ammonium sulphate at the rate of 100kg N/ha a yield of 34.75g/ha was obtained and with *Azospirillum* a yield of 32.0g/ha was obtained. The results clearly indicated that inoculation with *A. brasliense* could save about 60kgN/ha since a basal dose of 40kgN/ha as ammonium sulphate was provided.

Keywords: Azospirillum brasliense, Pseudomonas, Nitrogen uptake

REFERENCES

- Bouton, J.N. and Zuberer, D.A. (1979). Response of *Panicum maximum* Jaeq to inoculation with *Azospirillum brasliense*. *Plant and Soil*, **52**: 580-590.
- Cappuccino, J.G. and Sherman N. (1992). Microbiology Laboratory Mannual. Addison-Wesley Pub. Co. Inc.
- Cook, R.P; Stanovick, R. and Cascil, C.C. (1969). Determination of Carbofuran and its carbonate metabolic residue in corn. J. Agri Food. chem. 17: 272-282.
- Jotwani, M.G. and Sukhani, T.R. (1968). Seed treatment of Sorghum with Carbofuran for the control of shoot fly in Sorghum. *Pesticides*, 5: 13-14.
- Kapulnik, Y.; Sarig, S. and Okon, Y.; (2008). Response of wheat (*Triticum aesativum*) cv. Nirias to *Azospirrilum* inoculation 6th Internation symposium on nitrogen fixation with non kegumes 5-10 sept. Abst. Bnaff canada.

- Nayak, D.N. and Rao, V.R. (1980). Pesticides and hetero-trophic Nitrogen fixation in paddy. *Soil. Biol. Biochem*, **12**: 12-16.
- **Richardson, A.E.** (2004). Soil microorganism and Phosphorus and Nitrogen availability in soil biota, CSIRO Melboren. Aust. pp. 50-62.
- Rajeshkharan, V.; Thangepandian, V.; Muthukumar, T. and Sumathi, C.S. (2007). Influence of inoculants on growth and yield of green gram. *Jour. Sus. Agri.*, 31(3): 85-109.
- Sarig, S. and Kapulnik, Y. (2006). Effect of *Azospirillum* on nitrogen fixation and growth of several winter legumes Plant & Soil, **98** : 335-342.
- Sivaramaiah, N.; Malik, D.K. and Sidhu, S.S. (2007). Improvement of chick pea (*Cicer arietinum*) by inoculation of *Azospirillum*, *J. Micro.*, **47** (1) 51-56.
- Yahalom, E.; Okon, Y. and Dovard, A. (1990). Effect of Azospirillum on nitrogen fixation of several forage legumes. *Can. J. Micro.*, 36: 514-516.
- Yeole, R.D. (1997). Increased plant growth and yield through bacterization. *Zentrab. Fur Micro.*, **128** : 110-117.

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