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To cite the article: Hannan, M. A. , Shuborna sultana , I. Hossain (2020) , Integrated Management of Foot Rot of Chick pea Using Bio control Agents under Field Condition, *Journal of Agricultural and Rural Research*,4(2): 129-140.

Link to this article:

<http://aiipub.com/journals/jarr-220816-1004/>

**Article QR**



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## Integrated Management of Foot Rot of Chick pea Using Bio control Agents under Field Condition

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### ARTICLE INFO

**Article Type:** Research

**Received:** 16, June. 2020.

**Accepted:** 15, Aug. 2020.

**Published:** 15, Aug, 2020.

**Keywords:**

*Integrated management, foot rot, Chickpea, biocontrol agents, field condition.*

### ABSTRACT

The effect of cowdung, Bangladesh Institute of Nuclear Agriculture (BINA)-biofertilizer, and Bangladesh Agricultural University (BAU)-biofungicide, alone or in combination, was evaluated for controlling foot rot disease of **Chickpea**. The results reflect that BINA-biofertilizer and BAU biofungicide (peat soil-based *Rhizobium leguminosarum* and black gram bran-based (*Trichoderma harzianum*) are compatible and have combined effects in controlling the pathogenic fungi *Fusarium oxysporum* and *Sclerotium rolfsii*, which cause the root rot of **Chickpea**. Cowdung mixing with soil (at 5 t/ha) during final land preparation and seed coating with BINA-biofertilizer and BAU-biofungicide (at 2.5% of seed weight) before sowing recorded 77.50% field emergence of **Chickpea**, which showed up to 23.39 % higher field emergence over the control. Post-emergence deaths of plants due to foot rot disease were significantly reduced after combined seed treatment with BINA-biofertilizer and BAU-biofungicide. Among the treatments that was used, only BAU-biofungicide as the seed treating agent resulted in higher plant stand (83.63%). Use of BINA-biofertilizer and BAU-biofungicide as seed treating biocontrol agents and application of cowdung in the soil as an organic source of nutrient that result result in higher shoot and root lengths, and dry shoot and root weights of **Chickpea** . BINA-biofertilizer significantly increased the number of nodules per plant and nodules weight of **Chickpea**. Seeds treating with BAU-biofungicide and BINA-biofertilizer and soil amendment with cowdung increased the biomass production of **Chickpea** up to 56.67% over the control.



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