BIOPRIMING AND INTEGRATED MANAGEMENT OF MAJOR DISEASES OF SESAME

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Abstract: Sesame (*Sesamum indicum* L.) is one of the important oilseed crop grown widely under tropical and subtropical regions in India Diseases pose a major constraint in sesame cultivation that leads to yield loss. Various modules were evaluated for the management of major diseases in sesame. From the results, it was found that the module comprising of seed treatment with *Trichoderma asperellum* @ 10 g/kg, furrow application of enriched *Trichoderma* (2.5 kg *Trichoderma* sp. + 100 kg Vermicompost) @ 250 kg/ha followed by foliar application of combi product (Tebuconazole 50% + Trifloxysrobin 25%) @ 0.5 g/l at 30-35 DAS and second spray at 50-60 DAS significantly reduced the root rot, phyllody, *Alternaria* leaf spot and powdery mildew diseases. In addition to disease reduction, seed yield was also found to be enhanced in the effective module.

Keywords: Sesame, Diseases, Biopriming, Modules

REFERENCES

Anonymous (1998). All India Co-ordinated Research Project on Sesame and Niger. Tech. Prog. and Guidelines for Implementation. Project Coordinating unit (sesame and niger) Jawaharlal Nehru Agricultural University, Jabalpur, M.P. (INDIA).

Balode, A. (2010). Effect of tricodermin, biological product against *Botrytis* in horticultural crops. *Acta horticulture.* 877: 1583-1588.

Bedigian, D. and Harlan, J.R. (1986). Evidence for cultivation of sesame in the ancient world. *Economic Botany*. 40: 137-154.

Choopanya, D. (1973). Mycoplasma-like bodies associated with sesame phyllody in Thailand. *Phytopathol.* 63: 1536-1537.

Dolle, U.V. (1984). Studies on leaf blight of sesame (*Sesamum inducum* L.) caused by *Alternaria sesame*. *Maysore J Agric Sci.* 18: 89-90.

Enikuomehin, O.A. and Peters, O.T. (2002). Evaluation of crude extracts from some Nigerian plants for the control of field diseases of sesame (*Sesamum indicum* L.). *Trop. Oilseeds J.* 84-93.

Gayathri, S. and Indra, N. (2003). Management of seed and collar rots caused by *Aspergillus niger* Van Tiegham in groundnut (*Arachis hypogaea* L.) by biocontrol method. *Madras Agricultural Journal*. 90: 292–297.

Gopal, K., Jagadeswar, R. and Prasad, G. (2005). Evaluation of sesame (*Sesamum indicum*) genotypes for their reaction to powdery mildew and phyllody diseases. *Plant Disease Research*. 20: 126-130.

Guleria, S. and Kumar, A. (2006). Biochemical basis of white stem rot (*Sclerotinia sclerotiorum*) resistance in Rapeseed-Mustard. *Journal of Oilseeds Research.* 23: 69-71.

Haikal, N.Z. (2008). Control of *Rhizoctonia solani* in Soybean (*Glycin max* L) by seed-coating with

Trichoderma viride and *Gliocladium virens* spores. *Journal of Applied Biosciences.* 1: 34–39.

Harman, G.E. (2006). Overview of mechanisms and uses of *Trichoderma* spp. *Phytopathology*. 96:190-194.

Harman, G.E., Howell, C.R., Viterbo, A., Chet, I. and Lorito, M. (2004). *Trichoderma* species opportunistic, avirulent plant symbionts. *National Review of Microbiology*. 2: 43-56.

Jeyalakshmi, C., Rettinassababady, C. and Sushma, N. (2013). Integrated management of sesame diseases. *Journal of Biopesticides*. 6: 68-70.

Khan, S.N. (2007). *Macrophomina phaseolina* as causal agent for charcoal rot of sunflower. *Mycopathologia.* 5: 111-118.

Maiti, S., Hegde, M.R. and Chattopadhyay, S.B. (1988). Handbook of Annual Oilseed

Crops. Oxford and IBH Publ. Co. Pvt. Ltd., New Delhi.

Meena, B. and Ezhilarasi, T. (2019). Standardisation of *Trichoderma asperellum* as seed treatment in the management of root rot disease of sesame. *Int J Che Studies*. 7: 2176-2179.

Mihail, J.D. and Taylor, S.J. (1995). Interpreting variability among isolates of *Macrophomina phaseolina* in pathogenicity, pycnidium production, and chlorate utilization. *Can J Bot.* 73: 1596-1603.

Mohanti, N.N. and Behera, B.C. (1958). Blight of sesame caused by *Alternaria sesame*. New Comb. *Current Sci.* 27: 492-493.

Papavizas, G.C. and Lumsden, R.D. (1980). Biological control of soil-borne fungal propagules. *Annual Review of Phytopathology.* 18: 389-413.

Pastrana, A.M., Ureba, M.J.B., Aguado, A., Akdi, K. and Capote, N. (2016). Biological control of strawberry soil-borne pathogens *Macrophomina phaseolina* and *Fusarium solani*, using *Trichoderma asperellum* and *Bacillus* spp. *Phytopathologia Mediterranea*. 55: 109-120.

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Rajpurohit, T.S. (1993). Occurrence, varietal reaction and chemical control of new powdery mildew (*Erysiphe orontii* cast) of sesame Zimin. *Indian J Mycol Pl Pathol.* 23: 207-307.

Rangaswami, G. (1972). Diseases of crop plants in India. Prentice Hall of India Pvt. Ltd.

New Delhi, 520p.

Schilling, R. and Cattan, P. 1991. Sesame cultivation in tropical Africa. *Oleaginenx*. 46: 129-131.