

Effect of Medicinal Plants and Antagonists on Seed Mycoflora, Seed Germination and Vigour Index of Sunflower

G. B. Honna

Department of Botany

Shri Siddheshwar Mahavidyalaya, Majalgaon, Beed, Maharashtra, India
gbhonna@gmail.com

Abstract: Sunflower (*Helianthus annuus L.*) seeds were treated with fungal and bacterial antagonists. The seeds were soaked in fungal spores the bacterial suspension for 15 minutes. The treated seeds were incubated for 7-8 days. The percentage incidence of mycoflora, percentage of seed germination and vigour index were calculated in treated and controlled seeds. In treated seeds the percentage incidence of seed mycoflora decrease whereas percentage of seed germination and vigour index increases as compared to control. The seeds are treated with biocontrol agent like *Trichoderma harzianum*, *Trichoderma viride*, *Pseudomonas fluorescens* and *Bacillus subtilis*, Among these *Trichoderma harzianum* and *pseudomonas fluorescens* were most effective. The seeds were also treated with plant extracts like *Adirachta indica A. Juss.*, *Ocimum sanctum L.*, *Withania somnifera (L) Dunal*, *Polyalthia longifolia (sonner)*, *Lantana camara (L)*. And *Zingiber officinale (Rosc.)*. Among these effective *Adirachta indica A. Juss.*, was more effective than other plants.

Keywords: Sunflower, Medicinal plants, Antagonists, Mycoflora, Vigour index

REFERENCES

- [1]. Ali, F. and Ghaffor, A. (1992). Effect of seed treatment with biological antagonists on rhizospheric mycoflora and root infecting fungi of soybean. *Pakistan J. of Botany* .23(92) 183-188.
- [2]. Aspiras, R.H. and de la Cruz, A.R. (1985). Potential of biological control of bacterial wilt in Tomato and Potato with *Bacillus polymyxa* FU6 and *Pseudomonas fluorescens*. In : Bacterial wilt disease in Asia and the South Pacific, (Ed. Parsley, G.C.) ACIAR proceedings No. 13. pp. 89 – 92.
- [3]. Bandyopadhyay Sekhar (2001). Some studies on *Trichoderma* as a biocontrol agent. M.Sc. Thesis Plant Pathology, J N K V V, Jabalpur.
- [4]. Biswas, K.K. (1999). Screening of isolates of *Trichoderma harzianum* for their relative biocontrol efficacy against *Fusarium oxysporum* and *Rhizoctonia solani*. *Ann. Plant Prot. Sci.* 7(2) : 125 – 130.
- [5]. Chande D.S and Chowdhary S.R (1995). Antagonism of *Trichoderma longibrachium*, against microfungi isolated from the phylloplane of soybean. *Indian J. Mycol. Pl. Path.* 25(1&2):125.
- [6]. Chang, R.R. Baker, O. Kliefeld and I. Chet (1986) Increased growth of plants in the presence of the biological control agent, *Trichoderma harzianum*. *plants Dis.* 70:145-148.
- [7]. Claudia Calistru, Michelle, MC Lean and Patricia Berjak (1997). In vitro studies on the potential for biological control of *Aspergillus flavus* and *Fusarium moniliforme* by *Trichoderma* species. *Mycopathologia* 137:115-124.
- [8]. Dennis, C. and Webster, J. (1971). Antagonistic properties of species group of *Trichoderma* III. Hyphal interaction *Trans. Br. mycol. soc.* 57:363-369.
- [9]. Gahil, V.P. and Vala, D.G. (1996). Effect of extract of some medicinal plants on growth of *Fusarium moniliforme*. *Indian J. Mycol. Pl. Pathol.* 26(1) : 110 – 111.
- [10]. Hajra, K.K., Khatua, D.C. and Mukherjee, N. (1992). Antagonistic bacteria against fungal pathogens. *J. Mycopathol. Res.* 30(1) : 68 – 70.

- [11]. Kausik Biswas, Ishitachattopadhyay, Ranjit, Banerjee, K. and Uday Bandopadhyay (2002). Biological activities and medicinal properties of neem (*Azadirachta indica*) *current sci*, Vol. 82(11): 1376.
- [12]. Lalitha, V. and Veesha, K.A. (2006). Antagonistic effect of *Trichoderma koningii* on important seed borne pathogens of Paddy. *Asian Jr. of Microbiol. Biotech. Env. Sc.* Vol. 8, No.(1) : 483 – 488..
- [13]. Purnima Dargan and Sexena, S.K. (2002). Effect of plant extract of *Withania somnifera* on fruit rot of tomato caused by *Aspergillus niger* in presence of *Drosophila busckii*. *Indian phytopath* 55(1): 112-113.
- [14]. Rajathilagam, R. and Kannabirun, B. (2001). Antagonistic effect of *Trichoderma viride* against anthracnose fungus *Colletotrichum capsici*. *Indian Phytopath.* 54(1) : 135 – 136.
- [15]. Sitansu Pan and Someshwar Bhagat (2007). Antagonistic potential of *Trichoderma* and *Gliocladium spp.* from West Bengal. *J. Mycol. Pl. Pathol.* Vol. 37, No. 2.
- [16]. Xue Baodi, Juan, L. and Y ong xuan, C. (1995). Studies on antagonism of *Trichoderma*. Sp. Against 6 pathogenic fungi and biocontrol. *J Nanjing Agric. Uni.* 18: 31-36.