

TESTING OF FUNGICIDES FOR THE CONTROL OF LOOSE SMUT OF WHEAT

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Loose smut of wheat caused by *Ustilago tritici* (Pers.) Rostr., is one of the major diseases of wheat in wheat growing countries of the world. Upto 7% losses in wheat variety Kalyansona have been recorded in India (Joshi *et al.*, 1973) whereas an incidence of 1-2% has been reported in Pakistan (Kamal & Moghal, 1968; Hafiz, 1986; Khan *et al.*, 1992). In 1981-82, the severity of loose smut in some fields of Pakistan reached upto 15% (Khanzada & Aslam, 1982). Bhutta & Ahmed (1991) recorded upto 0.2% infection of loose smut in some areas of Punjab and suggested treatment of seed lots for the production of disease-free certified seeds. Seed dressing with fenufuran (Panoran) and tridimenol (Baytan) @ 2 to 4 g/kg seed provided complete control of loose smut of wheat while carboxin (Vitavax) did not show consistent results (Khanzada & Mathur, 1983). The present report describes the comparative efficacy of 3 systemic fungicides used at different dosage for the control of loose smut of wheat.

Seeds of wheat variety Sonalika collected during the crop year 1990-91 and 1991-92 showing 3% natural infection of loose smut by using embryo count method (Khanzada *et al.*, 1980) were used. The seeds were treated with three systemic fungicides viz., Carboxin (5,5-dihydro-2-methyl-1-4-oxathin-3-carboxanilide), Tradimefon [1-(4-Chlorophenoxy) 3,3-dimethyl-1-(1H-1,2, 4-Triazole-1-YL)] and Triadimenol [B-(4-Chlorophoxy) - d] (1,1-dimethylethyl) @ 1.0, 1.5 and 2.0 g/kg of seeds in an electric shaker for 20 minutes to ensure uniform coating. The seeds were sown at the experimental field of CDRI Karachi and at the ARI Field Station, Tandojam in 6x6 m plots @ 1000 seed per plot with four replications. Untreated seeds were sown as control.

All the fungicides used showed significant ($p < 0.05$) result in the control of loose smut disease of wheat (Fig.1). Concentration of different fungicides also had significant ($p < 0.001$) effect whereas increase in kernel weight were statistically non-significant. Baytan @ 1.5 g/kg was found most effective in the control of loose smut of wheat besides showing an increase of 17% in grain weight over the control. In contrast Khanzada & Mathur (1983) found Triadimenol (Baytan) to be equally effective @ 2 to 4 g/kg of the seeds. Tradimefon (Bayleton) and Carboxin (Vitavax) although partially reduced the incidence but did not altogether eliminate the disease. Baytan @ 1.5 g/kg seed could therefore be recommended for the control of loose smut of wheat in Pakistan.

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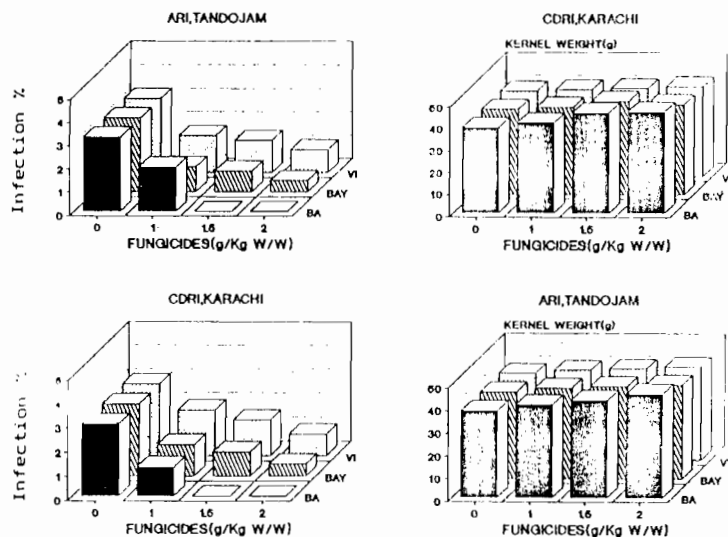


Fig.1. Effect of seed treatment with systemic fungicides in the control of loose smut infection and yield of wheat.

BA = Baytan, BAY = Bayleton, V1 = Vitavax, C = Control.

LSD_{0.05} (Locality) = 0.26

LSD_{0.05} (Fungicides) = 0.32

LSD_{0.05} (Concentration of fungicides) = 0.37.

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