

RESEARCH ARTICLE

Status of Karnal bunt of wheat in Jammu division (J&K)

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ABSTRACT

It has been observed that numerous factors like varietal reshuffle, intensive cultivation and high input technology are responsible for minor diseases to become major production constraint. One such disease that has caused much concern is Karnal bunt of wheat caused by *Neovossia indica* (Mitra) Mundkur. The disease was observed in all the districts surveyed in Jammu division. Highest disease incidence was recorded in Rajouri and Udhampur (1.66%), followed by Kathua (1.58%), Doda (1.41), Jammu (1.28%) and least in Poonch (0.90%). Teliospores of the fungus were isolated from the infected seed samples collected from areas surveyed. Soil samples were collected from all location surveyed. Area wise count of teliospores in soil provided the evidence that Poonch (7.5) followed by Rajouri (7.0) and Udhampur (6.5) were hot spots and Doda (1.5) was found to be least having teliospores in. Jammu soils which recorded only 2.0.

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INTRODUCTION

Wheat (*Triticum* sp.) known in Neolithic times is one of the foundation crops of India's agriculture. India occupies third position in the world in production of wheat. Various factors like varietal reshuffle, intensive cultivation and high input technology are designated to be responsible for minor diseases to become major production constraint.

One such disease that has caused much concern is Karnal bunt of wheat caused by *Neovossia indica* (Mitra) Mundkur. This disease was first reported from Karnal district of Haryana (India) in 1930s and was subsequently found in Pakistan, Afghanistan, Mexico and Nepal (Singh *et al.*, 1989). This disease is widely prevalent in all the wheat growing areas in North-Western India. During severe epidemics, total losses in India have been around 0.3 to 0.5 per cent with incidence as high as 89 per cent in some fields (Joshi *et al.*, 1983)

Karnal bunt of wheat also known as 'partial bunt' is of

great significance not only because it causes reduction in yield and quality of grain, but has proved a major setback in capturing the international wheat market due to strict quarantine and tolerance limit put to zero level by some countries (Agarwal *et al.*, 1993). Karnal bunt of wheat has become a serious threat to around 16-19 per cent of the world wheat, traded annually between countries. Karnal bunt usually affects only a few spikelets within a wheat spike. In addition, the pathogen usually causes a partial bunt with teliospores replacing only a portion of the kernel. Yield losses in the Punjab and Jammu regions of India were estimated at 0.2 per cent during 1969-1970 (Munjal, 1975; Wareham, 1986). Even during the worst years of 'epidemic', the damage to wheat crops was reported as only 0.2-0.5 per cent of total production in infested areas (Joshi *et al.* 1983). Losses of 0.3-0.5 per cent have been assessed during the most severe years between 1982 and 1989 particularly in Uttar Pradesh (Singh, 1994; 2005). Many reports