GAU Res. J. 1991. 16 (2) : 73-75

Occurrence of Leaf Blight Pathogens of Wheat in North Gujarat

Ashok Mishra, A.D. Patel and B.S. Jadon

Wheat Research Station, Gujarat Agricultural University, Vijapur, Mehsana, Gujarat-382 870

In India as many as 13 pathogens are reported to cause leaf spot and leaf blight in wheat (Joshi *et al.*, 1978). Involvement of many species of pathogen(s) of a disease makes the task of locating sources of resistance difficult. Information on the occurrence and prevalance of the species causing foliar blight of wheat in Gujarat is inadequate. Keeping it in view, an extensive survey was undertaken in the North Gujarat region to indentify the different pathogens involved in the leaf blight syndrome so that the germ plasm could be screened against the most predominant pathogen.

Diseased leaf samples of different wheat varieties were collected from North Gujarat areas during wheat crop seasons every year (1982-83 to 1987-88). The diseased leaf pieces were placed on glass-slides after surface sterilisation in petri-plates lined with moist blotters and incubated at 25°C for 5 days. The pathogens were examined under the stereoscopic binocular microscope. Isolations from diseased leaf samples were made on potato-dextrose-agar (PDA) for indentification of the pathogens. Pathogenicity was tested on 6 weeks old seedlings of wheat variety Bansi and A-9-30-1 raised in 23 cm earthen pots. Non- pathogenic ones were discarded. Cultures were sent to CMI, Kew, England for confirming the identity.

Out of several samples only pathogenic species were considered. It was revealed that number of different species varied in different years. During the first two years (1982-83) and 1983-84) only *Alternaria triticina* Prasada & Prabhu and *Helminthosporium sativum* Pammel, King & Bakke were observed whereas in 1984-85 additionally *H. tritici repentis* Died was also observed, which pre-dominated the others. During 1986-87 and 1987-88 two species of *Alternaria (A. triticina* and *A. alternata)* and 4 species of *Helminthosporium (H. sativum, H. tritici repentis, H. spicifera* and *H. rostratum)* were detected in varied proportions. Data on frequency distribution of leaf blight of wheat pathogens (Table-1) revealed that *Helminthosporium sativum* in 1983-84, *Alternaria triticina* in 1984-85 and 1987-88, *H. tritici repentis* in 1985-86 and 1986-87 were the most pre-dominant pathogens in North Gujarat. Occurrence of *H. tritici repentis, H. spicifera* (Bain.) Nicot., *H. rostratum* Drechster and *A. alternata* (Fr.) Keissler on wheat are new records for Gujarat State.

Joshi *et al.* (1974) reported that *H. sativum* and *A. triticina* are the two major pathogens in India. Later Singh *et al.* (1980)

TABLE 1

Prevalence of leaf blight/blotch pathogens of wheat in Gujarat.

Pathogen	Per cent Frequency				
	1983-84	*1984-85*	*1985-86*	*1986-87*	*1987-88*
Alternaria triticina	42.85	61..20	24.36	16.67	46.88
A. alternata	-	-	-	13.88	23.44
Helminthosporium sativum (*Bipolaris sorokinianum*)	57.14	38.80	14.10	11.11	3.12
H. tritici repentis (*Drechslera tritici repentis*)	-	-	61.53	34.72	15.62
H. Spicifera (*Bipolaris spicifera*)	-	-	-	9.72	3.12
H. rostratum (*Exserohilum rostratum*)	-	-	-	13.88	7.81
No. of samples examined	45	67	78	72	64

after examining 350 samples from different areas of the country concluded that *Drechslera sorokiniana (H. sativum)* was the major pathogen involved in foliar leaf blight of wheat on the country basis and *A. triticina* was of minor importance. However, they noted that the prevalence of *D. sorokiniana* was less in Punjab, Haryana and West Uttar Pradesh but more in Bihar and the tarai (submontane) region of U.P.

The present study revealed the variable frequency of different pathogenic species from year to year. Looking to the variable frequency of foliar blight pathogens of wheat it would be imperative to screen the germplasm against the mixture of species causing the disease in an area to ensure durable resistance against the leaf blight complex.

(Received on 26th Feb. 1990)

REFERENCES

Joshi, L.M., S.D. Gera, K.L. Adalakh, Srivastava K.D., B. Ram and L.T. Palmer, 1974. Some foliar disease of wheat during 1969-70 crop season. *Indian phytopath,* **27** : 178-81.

Joshi, L.M., K.D. Srivastava, D.V. Singh, L.B. Goel and S. Nagarajan, 1978. Annonated compedium of wheat diseases in India, I.C.A.R., New Delhi, pp 632.

Singh D.V., K.D. Srivastava, L.M. Joshi and S. Nagarajan, 1980. Note on the occurrence of foliar pathogens of wheat in India, *Indian J. Agric. Sci.* **50** : 633-634.