

**WHEAT DISEASES SITUATION IN PAKISTAN DURING THE CROP YEAR,
1972-73**

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During the crop season 1972-73 generally there was more rainfall than previous years spreading over a period of four months (January to April) with intermittent bright days. While this weather favoured the growth of wheat crop it immensely helped disease development too. Leaf rust, especially was wide-spread in the main wheat growing areas of Sind, Punjab and N.W. Frontier Province and all the commercial varieties were severely infected. Similarly, stripe rust was severe in the Northern foot hills and Azad Kashmir. Incidence of Flag smut was also on the increase. The region wise situation of wheat diseases during 1972-73 is given below:—

PUNJAB: Stripe rust started in February and was severe in the foot hill districts of Rawalpindi, Jhelum, Gujrat and Sialkot. Its severity was low in the central plains, commercial varieties Mexi-Pak-65, Chenab-70 Barani-70, Mangla-68 and the new promising line 114B-35 x Nad63 (V-1296) were severely attacked. In Rawalpindi area, susceptible varieties also developed ear infection and the grain was badly shrivelled. It is suspected that a new virulent strain of stripe rust has developed as Mexi-Pak was not attacked so severely in the past.

Leaf rust was especially severe this year throughout the province and its intensity ranged from 50-100%. Commercial varieties Mexipak-65 and Chenab-70 in the central plains and the foot hill districts and local, C591 and Barani-70 in the rainfed areas were severely affected. None of the commercial and promising varieties including the new promising line 114B-35 x Nad 63 (V-1296) were resistant to this rust except Blue Silver. The increased severity may be due to favourable weather and the presence of new race 158 of leaf rust which had developed since 1971.

Stem rust started late this year, first appearing early in April consequently its attack was not severe and the crop escaped damage. The commercial varieties Chenab-70, Barani-70, S.A. 42 and Blue silver were resistant to this rust. Old tall varieties, Mangla-68 and the new promising line 114B-35 x Nad 63 (V-1296) were however susceptible to this rust. The incidence of flag smut increased from traces in the past to about 10% in the districts of Fateh Jang and Campbellpur. Local tall varieties were moderately susceptible and the new commercial variety Barani-70 was very susceptible. The increased incidence may be due to favourable weather and the introduction of very susceptible variety Barani-70.

Partial bunt which is generally confined to Sialkot and Gujranwala areas was not recorded this year in that area. It is, however, interesting that this disease was recorded in traces in Rawalpindi and Gujar Khan and about 5% in Gujrat district. An unusual incidence of 95% head infection of Partial bunt with 15% grain infection developed in the variety Chenab-70 at Chillianwala farm in Gujrat district. This spread of the disease to new areas and its absence in Sialkot and Gujranwala areas cannot

be easily explained. It may be due to the combined effect of presence of inoculum, susceptible varieties and prevalence of favourable weather during anthesis.

In addition, severe attack of powdery mildew was recorded on Chenab-70 and 6134 x C271 at the Campbellpur Farm. It may be due to cool and wet weather during late February and March, 1973. Heavy incidence of leaf spot disease on several varieties/lines was also recorded at this farm.

SIND: Stripe rust generally does not occur and could not be observed this year. Leaf rust was prevalent all over the province and was in an epidemic form specially in Nawab Shah and Khairpur areas with intensity ranging from 50-80%. The commercial varieties Mexipak-65, Pak-70 and Barani-70 developed about 80% infection at several places. It was due to prolong favourable temperatures prevailing in the season.

Stem rust started very late and developed in low intensities during heading stage on local varieties. The crop generally escaped damage from this rust. Loose smut incidence was 1-2% mostly on local varieties.

Root rot was observed in the water shortage areas and the incidence was from traces to 5%.

N.W. FRONTIER PROVINCE: There was very low incidence of stripe rust in the N. W. Frontier Province. It developed only on old local varieties in the northern foot hill areas but not in plains due to abrupt rise in temperatures. Commercial varieties Khushal-69 and Mexipak remained free.

Leaf rust was severe all over the province and the intensity was about 70%. All commercial varieties including the new variety Tarnab-19, were susceptible to this rust. Stem rust started very late and only 5-10% infection was observed. All the commercial varieties were resistant to moderately resistant by this rust.

Flag smut was observed in traces and loose smut incidence was 1-2%, mostly on the local varieties.

BALUCHISTAN: Stripe rust was found in traces only at Ziarat. No development of leaf and stem rusts took place and only a few pustules were found sporadically in Hanna, Muslim Bagh and Pishin areas. Apparently, the dry conditions prevailing from latter part of the spring were responsible for this very low incidence.

Complete bunt incidence ranged from 5-20% in the Quetta-Kalat areas and mostly the local varieties were infected. Blue silver which was considered immune had shown 2% natural infection at the Research Institute. The incidence of bunt was reduced to traces in one trial where Granosan M seed dressing was used.

In Loralai, 1-2% incidence of ear cockle was observed while it was in traces in Bostan and surrounding areas. Traces to 1% incidence of flag smut was recorded in Quetta.

AZAD KASHMIR: The incidence of stripe rust ranged from 40 to 60% with the high intensities in the foot hill areas of Garhi Dopatta, Chinari, Dbirkot and Bagh. Commercial variety Mexipak-65, developed about 30% infection. Leaf rust

appeared late in March and reached to maximum intensity of 40% in the Muzaffarabad area. Old local varieties and Mexipak were severely infected with this rust. Stem rust started early in April and its intensity was generally around 30%, one field of local variety at Bagh had 100% severity. The loose smut incidence ranged from traces to 5% in Muzaffarabad and Dhirkot areas. Traces to 1% infection of flag smut was also observed.

PHYSIOLOGIC RACES OF STEM RUST

During the crop season 1972-73, 175 samples of stem rust were collected from 104 localities from all the 4 provinces and Azad Kashmir representing about 120 host lines/varieties. Physiologic races 11,17,21,34,40 and 117 were identified from 285 isolates, respectively of which physiologic races 21,34 and 40 were predominant.

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