



# WHEAT CROP HEALTH NEWSLETTER



**ICAR-Indian Institute of Wheat and Barley  
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## सारांश

गेहूँ के स्वास्थ्य की निगरानी भारतीय गेहूँ एवं जौ अनुसंधान संस्थान और समन्वित केंद्रों के वैज्ञानिकों द्वारा फरवरी माह में किए गए सर्वेक्षणों के माध्यम से की गई। करनाल जिले के नलवीपार, नलवीपार कलां, नलवी खुर्द, डाबरकी पार और कुंजपुरा गांवों से गेहूँ की डी.बी. डब्ल्यू. 222 और एच.डी. 2851 किस्मों पर पीला रतुआ रोग पाया गया। इसी तरह पंजाब में रूपनगर, एस.बी.एस. नगर, होशियारपुर, गुरदासपुर और पठानकोट क्षेत्र में गेहूँ की एच.डी. 3086, एच.डी. 2851, पी.बी.डब्ल्यू. 343, बरबेट और एच.डी. 2967 किस्मों में पीला रतुआ देखा गया। गेहूँ निरीक्षण के दौरान किसानों को पीला रतुआ रोग की रोकथाम के बारे में जानकारी दी गई और उन्हें पीला रतुआ रोग के प्रसार होने की स्थिति में प्रभावित खेतों में प्रोपिकोनाज़ोल 0.1% या टेबुकोनाज़ोल 50% + ट्राइफ्लॉक्सीस्ट्रोबिन 25% डब्ल्यू. जी. @0.06% का छिड़काव करने की सलाह दी गई। इसके अलावा करनाल जिले के नलवीपार गांव में गेहूँ की डी.बी.डब्ल्यू. 303 किस्म पर भूरा रतुआ रोग का संक्रमण देखा गया। मध्य भारत में गुजरात के मोती मोनपारी गांव, पश्चिम बंगाल के नदिया जिला और महाराष्ट्र में ओजर खेड (डिंडोरी तहसील) और नासिक जिले में इगतपुरी तहसील के अंतर्गत पिंपलगांव मोड में गेहूँ की अजीत 102 किस्म पर भी गेहूँ के भूरा रतुआ रोग का संक्रमण पाया गया। भूरा रतुआ रोग प्रभावित गेहूँ का निरीक्षण करने के उपरान्त किसानों को रोग के संक्रमण के अग्रिम प्रसार से बचने के लिए खेत में प्रोपिकोनाज़ोल 0.1% या टेबुकोनाज़ोल 50% + ट्राइफ्लॉक्सीस्ट्रोबिन 25% डब्ल्यू. जी. @ 0.06% जैसे अनुशंसित कवकनाशी और उनके प्रयोग के बारे में जागरूक किया गया। उत्तराखंड और कर्नाटक में किसानों के खेतों में रतुआ रोग की कोई भी घटना नहीं देखी गई। हालांकि, किसानों के खेतों में फ्यूजेरियम हेड स्कैब, अनावृत कंड, चूर्णी रोग एवं पत्तों पर पर्ण झुलसा रोग का छिटपुट संक्रमण देखा गया। बीमारियों के अतिरिक्त उत्तर प्रदेश के ग्राम वाजीदपुर (बड़ौत) के किसानों के खेतों में गन्ने के पाइरिला कीट का गेहूँ की फसल में संक्रमण पाया गया। कुल मिलाकर गेहूँ की फसल का स्वास्थ्य सभी गेहूँ उत्पादक क्षेत्रों में उत्कृष्ट है और मौजूदा मौसम फसल वृद्धि के पक्ष में है।

## Summary

The surveys were conducted by ICAR-IIWBR and cooperating centres to monitor the crop health in all the wheat growing regions of India. The occurrence of yellow rust was reported from Nalwipar, Nalwiparkalan, Nalwikhurd, Dabarkipar and Kunjpura villages of Karnal district on wheat varieties DBW222 and HD2851. Similarly, the yellow rust was also noticed in wheat varieties viz., HD3086, HD 2851, PBW 343, Barbet, and HD 2967 in wheat fields in Roopnagar, SBS Nagar, Hoshiarpur, Gurdaspur and Pathankot region. The farmers were contacted and advised them to spray their fields with Propiconazole 0.1% or Tebuconazole 50% + Trifloxystrobin 25% WG @ 0.06% to avoid further spread. Besides this, the first occurrence of leaf rust was also noticed in Nalwipar village of Karnal district on wheat cultivar DBW303. The occurrences of leaf rust was also reports from central India in Moti Monpari village of Gujarat, Nadia districts of West Bengal and in in Ozarkhed (Dindori tahasil) and Pimpalgaon Mor (Igatpuritahasil in Nashik district) in Maharashtra on variety Ajeet 102 and on some off type plants. The farmers of the affected wheat fields were made aware about the leaf rust diseases and their management with recommended fungicides like propiconazole 0.1% or Tebuconazole 50% + Trifloxystrobin 25% WG @ 0.06% in field to avoid further spread of initial infection. No incidence of all the three rusts was observed in Uttarakhand and Karnataka. However, sporadic incidence of head scab, loose smut, powdery mildew and leaf blight was observed also in farmer's fields. Besides diseases, wheat crop infestation with sugarcane leaf-hopper was also noticed in the farmer's fields of Village Vazidpur (Baraut) of Uttar Pradesh. Overall the wheat crop health is excellent in all the wheat growing areas and the prevailing weather is in favour of the crop growth.

Wheat crop health was monitored by surveys performed by scientists from the coordinated centers. Besides this, information technology tools also used in accessing crop situation and information collected by contacting framers and other stakeholders through mobile, and whatsapp etc. Overall, the crop health is excellent. No significant crop damage due to diseases and insect infestation has been observed during the February month. The state wise detail report is as follows:

### **Haryana and Punjab**

A team comprised of Dr. Charan Singh, Senior Scientist (Plant Breeding) and Dr. Ravindra Kumar, Senior scientist (Plant Pathology) from ICAR-IIWBR, Karnal surveyed some villages in Karnal district viz., Nalwipar, Nalwiparkalan, Nalwikhurd, Dabarkipar and Kunjpura for yellow rust occurrence on February 17, 2023. The yellow rust disease was noticed on the wheat varieties DBW222 and HD2851 in range of 20S-40S. The incidence of brown rust was also noticed in DBW303 in Nalwipar village of Karnal. Interactions were also made with the farmers of affected wheat fields and suggested them to spray their fields with Propiconazole 0.1% or Tebuconazole 50% + Trifloxystrobin



25% WG @ 0.06% to avoid further spread. Incidence of powdery mildew was also observed in some fields. In the surveyed fields, the crop was in ear-emergence to flowering stages except few very late sown fields which were in tillering stage. The crop was very good and healthy except few fields which were having little to severe incidences of yellow and brown rust.



Surveys were also conducted by Dr. Jaspal Kaur and her team in Punjab on February 7, February 15 and February 23, 2023 to know the situation of yellow rust and other diseases in the state. They visited several wheat fields in Roopnagar, SBS Nagar, Hoshiarpur, Gurdaspur and Pathankot. They recorded the incidence of stripe rust in several fields with severity levels ranging from 5S to 20S except 2-3 fields, where severity was high (60S) on varieties namely HD3086, HD 2851, PBW 343, Barbet, and HD 2967 etc. Farmers were contacted and have been advised to spray their fields with Propiconazole 0.1% or Tebuconazole 50% + Trifloxystrobin 25% WG @ 0.06% to avoid further spread. Besides this, incidence of powdery mildew was also noticed in some fields.

### **Uttar Pradesh**

A survey was conducted by Dr Poonam Jasroitia and Sh. Bhal Singh from ICAR-IIWBR, Karnal in the farmer's fields of village Vazidpur, Baraut, district Baghpat of Uttar Pradesh on February 21, 2023 to know the real-time pest situation in wheat after the information of insect attack reported to the institute. The surveyed fields were under sugarcane-wheat cropping system and conventional tillage practices were used for raising the crops. The wheat fields were monitored carefully. It was found after inspection that



wheat crop was infested with sugarcane leafhopper, *Pyrilla perpusilla* Walker (Hemiptera: Lophopidae). This pest is actually a major sucking pest of sugarcane. Both adults and nymphs suck the sap from leaves which leads to yellowing and stunting. In addition, leafhoppers secrete large amount of honey dew which encourages sooty mould growth and indirectly it affects photosynthesis. During the survey, both adults and nymphs were found feeding on leaves, shoot and even emerging ear heads and secreting honey dew in large quantity. The plants were stunted with leaves turning yellowish with black sooty mould. It was informed by the farmer that the occurrence started after the harvesting of sugarcane crop. In surveyed fields, the infestation was recorded to be between 5 to 6 per cent. The attack of *P. P. perpusilla* infesting heavily on wheat and oats from Chhattisgarh is already reported. It was also reported that the insect preferred to feed on wheat during winter season and late ripening oats varieties during April-May in Punjab region. Temperature between 25-30°C and 70-80% RH were found to be the most suitable for growth and development of *Pyrilla*. The burning of trash helps in destroying unhatched eggs and overwintering nymphs. The spray of chlorpyrifos is recommended for the control of the *P. perpusilla*.



### Uttarakhand

A survey was conducted by a team of scientists namely Dr. Navin Chander Gahtyari, Scientist (CID), Dr. Devender Sharma, Scientist (CID) and Mr. Varun Supyal, Technical Assistant from ICAR-VPKAS, Almora on February 3, 2023. The team surveyed Jhankat, Naukulia and nearby wheat growing areas of Sitarganj, district Udham Singh Nagar. The crop was at booting to early heading stage. It has been observed that at village Jhankat (Latitude: 28°949056°, Longitude 79°791728°), Sitarganj, around 13.0 ha area has been planted with VL *Gehun* 829, VL *Gehun* 2014, VL *Gehun* 2041, VL *Gehun* 2028, VL *Gehun* 953 and VL *Gehun* 967. In these fields, no yellow rust symptom was observed. Also, no rust was found on other adjacent fields as well. Similarly, field survey at village 'Naukulia', Sitarganj (N 28°58.832', E 79°42.876') around 17.0 ha area has been planted with VL *Gehun* 829, VL *Gehun* 2014, VL *Gehun* 2041, VL *Gehun* 953 and VL *Gehun* 967. In these fields, no yellow rust symptom was observed. Also, rust was not observed in the other adjacent fields with local and varieties like HD2967. Overall, the wheat crop was in good conditions except a few fields where high *Phalaris minor* infestation was observed.



Overall, the wheat crop was in good conditions except a few fields where high *Phalaris minor* infestation was observed.

### Gujarat

Dr. I. B. Kapadiya, Assistant Research Scientist (Plant Pathology), Junagadh Agricultural University, Junagadh surveyed during February 19, 2023 in the area of Junagadh District. The crop condition was overall good. Among the surveyed sites, wheat cultivars viz. GW 496, Lok-1 and Pissi local have occupied maximum area. There were no major symptoms of any diseases and pests in this area. In one field of Moti Monpari village, off type plant observed



leaf rust up to 40S and the sample was sent to ICAR-IIWBR, Regional station, Flowerdale, Shimla for their race identification.

### **Bihar**

Wheat crop was monitored at Bhagalpur and their adjoining areas like Chanderi, Jagdishpur, Goradih, Sabour and Barari areas in farmer's field by scientists and technical staff namely Dr C. S. Azad, Dr Deepak Baranwal, Subarna Roy Chowdhary and Ambedkar Kumar during February 18-19, 2023. In majority of the surveyed areas, it was observed that most of the sown wheat crop was in boot stage. The crop condition was very good and no major incidence of diseases in field except brown rust and loose smut disease were noticed. Besides this, in incidence of leaf blight (up to 46 in double digit scale) were also noticed in some of the varieties at farmer's fields of Sabour. As far as infestation of pest is concerned, there was Infestation of aphids low to medium in the surveyed areas. Infestation of stem borer was also observed in some fields but the damage was below economic threshold level. Overall, the crop health is very good.



### **West Bengal**

A survey was conducted on February 25, 2023 of wheat fields in Nadia districts by a team comprised of Shri Raghunath Mandal, Assistant Professor (Plant Pathology), Dr Anirban Maji, Assistant Professor (Genetics and Plant Breeding) and Dr. Shyamali Das, Assistant Professor (Agronomy), AICRPW&B, BCKV, Nadia, West Bengal to understand the disease and insect pest scenario at the present crop growth stage of wheat. During the field survey, the incidence of brown rust and *Fusarium* head blight diseases were observed in the different wheat fields in a low severity. Spot blotch of wheat was also observed in high severity. Regarding entomological aspect severe infestation of aphids, stem borer and termite were observed in the surveyed area.



## Karnataka

The survey was conducted on February 8, February 17, February 24 and February 27, 2023 by Dr. Gurudatt M. Hegde (Principal Scientist, Plant Pathology and Head), Dr. Kumar Lamani (Agronomist), Dr. Suma Biradar (Sr. Breeder), Dr. Uday Reddy (Jr. Breeder) and Mr. Sudhakar Kulkarni (Technical officer) in Dharwad, Belgaum, and Baglkote districts. The crop was in dough stage and there was no incidence of leaf rust and stem rust in the farmer's field. The leaf blight incidence was observed up to 24 (double digit score) in the wheat fields. In Belgaum district (Yelparatti, Harugeri, and Hidakal), the *Fusarium* Head Blight (FHB) incidence was also noticed in traces.



## Maharashtra

Survey was conducted by Dr. B.C. Game and Mr. B.M. Mhaske on February 15, 2023 in Nashik district. The villages covered under survey were Talegaon, Dindori, Awankhed, Ozarkhed, Ambaner, Sajola, Khirad, TirhalBudruk, Chankapur and Payarpada. Wheat crop in the area was in dough to maturity stage. Some fields in Dindori tahasil were under moisture stress. The varieties under cultivation were Ajeet 102, Ajay 72, Phule Samadhan, Kohinoor, Supreme MW 74, Lok-1, and GW 496, etc. First natural incidence of leaf rust was found during the survey in farmers' field at Ozarkhed in Dindori tahasil on offtypes in variety Ajeet 102 which was sporadic and upto 40S at two spots in a plot of 0.40ha. During survey, second field with incidence of leaf rust was found at Tirhal Budruk in Kalvan tahasil on variety Lok-1, where the incidence was in traces and sporadic with low severity. All the other wheat fields were free from leaf rust. Incidence of stem rust was not found in any of the fields surveyed, while incidence of leaf blight was also low. Crop was found free from minor diseases like foot rot and loose smut. Infestation of aphids was low to medium in the surveyed area, while incidence of shoot fly was low in late sown crops which were in CRI stage. Incidence of stem borer was in the range of 1 to 2 percent which was below ETL.



Dr. B.C. Game ( Jr. Wheat Pathologist), Agricultural Research Station, Niphad also reported the first natural incidence of leaf rust during survey in Nashik district on dated 15.2.2023 in farmers' field at Ozarkhed. Natural incidence of stem rust was not found in any of the farmers fields surveyed. Although, incidence of leaf blight was noticed in traces.

The wheat crop survey was also made by Dr. B.C. Game and Mr. B.M. Mhaske on February 17, 2023 in Nashik and Ahmednagar districts. Pimpalgaon Mor and Khed were the villages from Igatpuritahasil in Nashik district while Bari, Malegaon, Vithe, Dhumalwadi, Dhandarfal, Sangamner, Ranjangaon were the villages covered in survey from Ahmednagar district. The varieties under cultivation were Phule Samadhan, Ajeet 102, Ankurkedar, Mukut, Super 222, GW 496, Ajay 72, Lok-1, etc. Off-types were found in majority of the fields ranging from 5 -20 per cent. Natural incidence of leaf rust was found during the survey at only one location in farmers' field at Pimpalgaon Mor, which was in traces on unidentified wheat variety at single locus in the field of 0.15 ha. All the other wheat fields were found free from leaf rust, while incidence of stem rust was also not found in any of the fields surveyed. Infestation of aphids and stem borer was observed in some fields but the damage was below ETL.

Wheat rust survey was also conducted by Dr. M. A. Sushir, Dr. V. M. Sali, Dr. D. P. Deshmukh, Dr. S. B. Dighule and Dr. D. S. Kadam in Satara, Pune and Ahmednagar districts in Maharashtra. It was observed that Normal sown wheat crop is in maturity stage whereas; late sown crop is in flowering stage. Incidence of leaf-rust was observed upto 20S on off-type wheat and upto 5S on improved varieties. Stem rust was not observed on surveyed farmer's fields at Satara, Pune and Ahmednagar districts in Maharashtra.



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