

WHEAT CROP HEALTH NEWSLETTER



Directorate of Wheat Research
P.B. 158, Karnal-132 001



Volume: 19 (2013-2014)

Issue: 3

Available on website: www.dwr.res.in

The crop health reports received from mid January to February, 28, 2014 have been compiled in this issue. Wheat crop health reports were received from State Department of Agriculture, Co-operators of AICW&BIP, SAUs' and KVKs'. Dr. Indu Sharma, Project Director, DWR, Karnal monitored the wheat crop health in different states of the country. During this period, crop health reports were sent regularly to ICAR, DAC (Ministry of Agriculture), G.O.I., New Delhi and advisories for stripe rust management were issued as and when required.

North Western Plain Zone (NWPZ)

Extensive surveys were undertaken in Yamunanagar and Karnal districts by the Officers of State Department of Agriculture (Yamunanagar, Karnal) and scientists of KVK, Yamunanagar, DWR, Karnal and CCS HAU, Hisar. Regular wheat crop health reports were received from Dr. A. P. Dabas, Deputy Director of Agriculture, Yamuna Nagar. Till end of February, 2014, stripe rust (yellow rust) was observed at 40 farmers fields in 25 villages in Yamunanagar. The disease was observed on wheat varieties, WH 711, HD 2932, HD 2851, HD 2967, DPW 621-50, Shri Ram 271, DBW 16, DBW 17 and Barbat. Dr. Madhu Meeta Jindal (PAU, Ludhiana) observed stripe rust on var. HD 2967 (20-40S) in village, Dabkera and on var. HD 2733 (20-40S) in village Theri, Mohali on January 13, 2014. A team of DWR Regional Station, Flowerdale, Shimla (Dr. O. P. Gangwar, Dr. Parmod Parsad, Dr Subodh Kumar) conducted extensive survey in Punjab and HP during Jan. 15-16, 2014. Wheat crop health was monitored by Dr. M. S. Saharan (DWR, Karnal) in Yamunanagar on Jan 16, 2014. On 17th Jan., Dr. M. S. Saharan, Dr. S. K. Rana (CSKHPKV, Malan) and Dr. Ritu Bala (PAU, Ludhiana) conducted survey in Punjab. On 18th Jan, Dr. M. S. Saharan conducted survey in Banur area of Punjab. Stripe rust was observed only at two locations in Punjab (Ananadpur Sahib area).

Dr. Dhanbir Singh (CSKHPKV, Dhaulakuan) reported stripe rust in Trap Plot Nursery in infector rows with 5 to 10S severity at Dhaulakuan on January 17, 2014. Stripe rust infection was also recorded in Kharchia mutant (10S) and also in SAARC nursery susceptible check (10S) at Dhaulakuan. On January 21, 2014, Dr. S.S. Karwasara Dr. I. S. Panwar and Dr. R. S. Beniwal (CCSHAU, Hisar), Dr. R.S. Taya (KVK, Damla) and Dr. Sudheer Kumar and Dr. R. Selvakumar (DWR, Karnal) surveyed and did not observe any rust in Karnal and Yamunanagar. Powdery mildew was noticed in Kishanpura village on variety PBW 343 on lower leaves only. On January 22, 2014, Dr. S.S. Karwasara Dr. I. S. Panwar and Dr. R. S. Beniwal surveyed farmers fields enroute Nilokheri, Tarowari, Shahabad, Pipli, Ambala, Mullana, Kapli, Broda, Siwan Majra, Kurukshetra and Dhand. In the field of Sh. Sawarn Singh of Siwan Majra village (Brada Block), stripe rust foci of about 2m² (20S) was observed on var. Barbet.

A team of APPO, Yamunanagar, SDAO, Jagadhri and scientist from KVK Damla visited village Haripur Jattan, Sudhal, Sudhail, Rajpura and Kotar Khana of district Yamunanagar on January 22, 2014 and observed stripe rust in traces in villages Haripur Jattan and Kotar Khana on varieties, DPW 621-50 and HD 2967, respectively. Dr. Indu Sharma, Project Director, DWR, Karnal monitored the crop health in Punjab (Ludhiana, Anandpur Sahib, Nawasahar) on January 24, 2014 and in Yamunanagar area of Haryana on January 28, 2014. Dr. Madhu Meeta Jindal conducted survey on January 31, 2014 and reported stripe rust on DPW 621-50 (40S) in village Rainsara (Nurpur Bedi, Ropar), on HD 2967 (40S) in villages, Surewal (Ropar), Hardo, Naushehra, Bhagtena Tulian (Gurdaspur).

Dr. M. K. Pandey (SKUAST, Jammu) extensively surveyed Jammu, Kathua and Samha districts during January 25-28, 2014. Stripe rust was observed in a field at Devigarh, (RS Pura, Jammu) on variety PBW-550 (20S) sown in about 2 Kanal areas and also in village Saikalan on var. HD 2967 (20S) sown on first week of Nov., 2013. In Samba district stripe rust was observed in village Kotli on variety PBW-343 (40S) and one field at Matkali (Ramghar) on variety PBW-550 (30S) in 2-3 meter patch. Incidence of stripe rust was observed in village Sultanpur (Kathua) on variety WH 711 (20S) on one acre field. The crop was sown in first week of Nov., 2013. Further the survey conducted on route via Udhaywalla, Marh, Chinnor, Bishnah and Akhnoor. No rust was observed at this route. In general, the crop was very good in Jammu, Kathua and Samba district. Dr. Vishal Gupta (SKUAST, Jammu) also observed stripe rust (10-15 MS) in village Talhar (RS Pura, Jammu) in the field of Sh. Darshan Lal on January 21, 2014.

Survey was carried out from 3 to 5th February in the area of Haryana and Punjab by a team of scientists. Dr. Sudheer Kumar (DWR, Karnal) and Dr. Vaibhav Kumar Singh (IARI, New Delhi) did not observe any rust in the route starting from Karnal to Ludhiana via Yamunanagar on February 3, 2014. On February 4, 2014, Dr. Madhu Meeta Jindal also joined the team. Farmers fields were visited in Macchiwara, Chamkaur Sahib, Rasidpur, Rasidpur, Phool Khurd, Balachaur, Nawashahr, Badala, Nawashahr and Garhi Ajit Singh. Stripe rust was observed at Chamkaur Sahib, Rasidpur and Phool Khurd. At Chamkaur Sahib, stripe rust of 20 to 40S severity was observed in about 10 meter patch on variety HD 2967. At Rasidpur, stripe rust severity was 10 to 20S on variety HD 2967 in about 5 meter patch and at Phool Khurd, stripe rust was observed in traces. On February 5, 2014, Dr. Sudheer Kumar surveyed Ludhiana, Fatehgarh Sahib, Mohali and Ambala. No rust was observed. On February 5, 2014, Dr. M. S. Saharan and Dr. R. Selvakumar surveyed Karnal area for wheat rusts. No rust was noticed. On February 13, 2014, Dr. M. S. Saharan did not observe any rust in Indri area. During February 19-20, 2014, Dr R Selvakumar and Dr Sujay Datta (ISRO, Ahmedabad) surveyed Haryana and Punjab (Roop Nagar, Gurdaspur, Pathankhot, Amritsar) for wheat rusts. No rust was observed. Dr Sujay Datta and Dr Mangal Singh observed stripe rust in Yamunanagar area of Haryana on February 22, 2014.

On February 19 , 2014, Dr Madhu Meeta Jindal and Dr Beant Singh (PAU, Ludhiana) surveyed wheat crop area of districts, Ludhiana, Hoshiarpur enrouting Phillaur, Nagar, Bisla, Banga, Behrampur, Balowal, Dholanwal, Phagwara for rusts and insect pests. At KVK Bahawal, stripe rust was observed on HD 2967 (One foci of 40S) and DPW 621-50 (20S). At Bahawal, stripe rust was recorded on Agra Local, Lai Bahadur, HD 2329 and HD 2204 in TPN. In village Dholewal, HD 2967 grown on ~ 5 acres was having stripe rust (5-10S). This field was also having flag smut and high incidence of aphids. In village Taunli, HD 2967 and DBW 17 were infected with stripe rust (40S). There was severe incidence of aphids also. Stripe rust was also

observed in fields on Hoshiarpur-Phagwara road. Overall the crop was healthy. Stripe rust was observed in five villages (Darba, Paniwala Mota, Bhagsar, Audhan and Bara Gurha) in Sirsa (small foci of yellow rust in the range of 20-30S) on February 19, 2014 by State Department Officers of Sirsa. In the stripe rust infected fields, the farmers have planted the varieties HD 2851, WH 147 and PBW 343. These fields were also visited by CSHAU, Hisar scientists.

The team comprised of Dr. Dhanbir Singh, Dr. S. L. Gartan (HAREC Dhaulakuan), Dr. Susheel Chauhan (ATMA), Dr. Rathore (BTM, Paonta Sahib) and Dr. Pawan (BTM, Paonta Sahib) visited wheat fields in a number of villages on February 21, 2014. The incidence of stripe rust was noticed in the fields of Sh. Sanjay Kumar, Sh. Raghbir Singh and Sh. Bhagwan Singh in village Kolar. The incidence of stripe rust in fields of Shri. Sanjay Kumar was recorded to the tune of 25% with severity of 50S (6 Bighas). In other fields, incidence was about 2% with a severity of 30S. In village Rukhree, disease was noticed in fields of Sh. Prem Das (3 Bighas) with incidence of less than 1% and severity of 50S. In the fields (2 Bigha) of Shri Dinesh Bansal village Rukhree, stripe rust was recorded with less than 0.5% with a severity of 10S. The team also monitored wheat crop health on February 25, 2014. Stripe rust was recorded on wheat varieties, HD 2894 (60S), Barbet (100S), PBW 343 (40S) and unknown variety (40-80S) in village Barotiwala. In village Nawada, stripe rust was recorded on wheat variety, WH711 (70S). Stripe rust severity to the tune of 20S was also recorded on wheat variety HPW 236. Incidence of stripe rust on this variety was less than 1% in three bighas.

Northern Hill Zone (NHZ)

On January 29, 2014, Dr. S. K. Ghabru (PC KVK, Berthin, Bilaspur, HP) and PD (ATMA, Bilaspur) conducted survey in villages, Kalol, Jaddu Kulzar, Baroti, Bhadoli Khurd, Bhadoli Kalan and Bakain. Stripe rust was observed in Kalol on HD 2733 in about 4 meter patch and also in villages, Jaddu Kulzar (HPW 236) and Bakain (HD 2967) in traces. On February 18, 2014, Dr. S. C. Bhardwaj (Flowerdale, Shimla) visited some of the areas in district Bilaspur (Chandpur and Kandaur) and Solan (Bhararighat) of HP. The areas visited were those where stripe rust occurs every year. Most of the areas were free from stripe rust. At Kandaur, on one side variety HS 420, grown in about 0.4 ha was free of stripe rust. Adjacent field of DPW 621-50 had one month old, three foci of stripe rust with 80S severity. Stripe rust was further spreading to other parts of the field which was about 0.5 ha. Crop stand was very good. Dr. Bhardwaj also surveyed wheat and barley crops in East of Shimla (villages, Bakhrai and Malyana) on February 25, 2014. These areas were free from rusts. As per report received from the Project Director ATMA, Mandi and Kullu, no stripe rust was noticed in Mandi and Kullu area during January, 2014. In mid February, stripe was observed in villages, Baldwara, Karni, Khayalag in Mandi area.

Wheat crop health was monitored by conducting survey and surveillance tours in parts of Nagrota Bagwan, Bhedu Mahadev, Bhawarna, Lamba Gaon and Baijnath blocks of district Kangra and Chauntra, Darang, Mandi Sadar, Balh and Sunder Nagar blocks of district Mandi during the month of February, 2014 by Dr. S. K. Rana. The overall crop condition was very good in all the areas due to the rains received almost at regular intervals during February. Stripe rust had started appearing at some locations viz. Bagh/ Alampur and Jangal in Lamba Gaon block, Sunder Nagar in Sunder Nagar block, Nagchala in Balh block and Mehar in Mandi Sadar block with severity ranging from 5-40S on wheat varieties like HS 240, HPW 249, HPW 184, PBW 343 etc. Flag smut in traces was recorded at Alampur and Jangal areas of Lamba Gaon block. Powdery mildew with high severity was recorded on

HPW 184 at Alampur area in Kangra district and low to moderate severity at Sunder Nagar, Nagchala and Mehar areas in Mandi district with intensity varying from 3-7 (on 0-9 scale). Moderate to severe attack of aphids was recorded in Balh valley and Sunder Nagar. Wheat Disease Monitoring Nursery (TPN) was found free from stripe rust at Sunder Nagar, however, YR was recorded on VL 892 in TPN planted at SAREC, Kangra.

Wheat crop health monitoring survey was undertaken on 6th February in the Almora district covering Chaukhutia, Binta Valleys and Someshwar area by Dr. Lakshmi Kant and Dr. S. K. Jain (VPKAS, Almora). No rust incidence at Manila, Ida (Bagwali Pokhar), Binta, Mehal Chaura, Basbhida. Ganai and Simalti. At most of the places, farmers have planted improved varieties and the crop was at tillering to late tillering stage at present. The first natural occurrence of yellow rust of wheat was observed in the infector rows of trap nurseries planted at Hawalbagh experimental farm on 5-6 February 2014 and the severity was recorded on 12.2.2014 up to 10-20S. Similarly, natural occurrence of yellow rust in one entry of station trial at Hawalbagh was observed up to 10S in the first week of February.

Wheat crop was monitored for rust in the farmers' field by Dr. J. P. Jaiswal, Dr. Deepshikha and Dr. Kanak Srivastava (GBPUA&T, Pantnagar) on February 11, 2014 enroute Rudurpur (villages, Gangapur, Premnagar and Narainpur), Dineshpur (villages, Buksora and Sakenia), Gadarpur (villages, Mohanpur, Badakheda, Motipur, Jai nagar, Kundan nagar and Chandi pur), Bajpur (villages, Bajpur, Tanda Azam, Maheshpur Doraha, and Namoonaa) and Kashipur (villages, Khadakpur, Kunda gaon and Kundesari). The varieties sown in the areas were PBW 550, PBW 502, WH 711, PBW 226, DBW 17, PBW 343 and PBW 154. The crop health was good and rusts were not observed. On February 12, 2014, area between Pantnagar and Khatima enroute Kichha (villages, Shankar farm (Bhanga), Bara, Sirsa chowki and Gurunanak farm (Bari), Sitarganj (Turkattisor and Nakha farm), Nanakmatta and Khatima (villages, Sara Saria, Jhankat, and Lohiyapul) were surveyed. Varieties sown in these areas are PBW 226, DBW17, PBW 343 and PBW 550. All the varieties were found free from rust and other diseases. Survey was conducted from Pantnagar to Haldwani via Golapar (Nawarkheda, Purvikhera, Devlatalla, Kuwarpur naya gaon, Sambal), Gorapadao (Haripur tula), Motinagar and Motahaldu on February 13, 2014. Dominant variety sown in these areas was PBW 154 and other varieties grown by the farmers were PBW 550, UP 2425, PBW 502 and PBW 373. Overall crop was good and no rust was observed but between Pantnagar to Haldwani, powdery mildew was noticed at many farmers fields.

As per report received from Joint Director (QC), Uttarakhand, stripe rust (traces) was observed in last week of February in Khatima block of Udham Singh Nagar on varieties PBW 343, PBW 502, HD 2967, PBW 550 and DPW 621-50.

As per report received from Director of Agricultur, Himachal Pradesh stripe rust was observed during February 1-2, 2014 in Hamirpur (villages, Kot, Drogan, Neri Blata, Khirki and Jangal Berry), Mandi (villages, Baldwara, Karni, Nabhai, Khayalag, Bari and Seyoh), Una (villages, Chaksari, Jubehar, Suri, Nandpur, Kotohar, Kalan, Chururu, Baheri, Tanoh, Tihra, Sohari, Talmera, Bhadsali, Solah, Badehra, Kangar, Palkawah, Panjavar, Khad, Ispur, Pandoga, Basal, Rampur, Dangoli, Lamlehri and Dangoli)

Central Zone (CZ)

Dr. Indu Sharma monitored the crop health in Rewa (MP) on February 5 and Rajkot (Junagarh, Gujarat) on Feb. 19-20, 2014. She also monitored wheat crop health in MP (Raipur, Bilaspur, Jabalpur) during Feb. 23-24, 2014. She observed leaf rust in off types in farmers fields of Jabalpur. On Feb., 28, 2014, monitored wheat crop health in Sawai Madhopur and adjoining hilly areas of Vindhyachal. Crop was very good in MP and Rajasthan. She observed leaf rust (TR-5MS) at farmers fields on off type plants on the way from Kota to Sawai Madhopur. Dr. K. K. Mishra conducted extensive survey in Powarkheda area during January-February, 2014.

North Eastern Plain Zone (NEPZ)

Dr. S. P. Singh (NDUA&T, Faizabad) observed moderate incidence of foliar blight in timely as well as late sown crop. Leaf rust had appeared on Agra Local on February 27, 2014. During first fortnight of February, shoot fly and aphids were also observed in some fields. Dr. Javed Bahar Khan did not observe any rust in Kanpur area at farmers fields as well as in TPN genotypes till February end. On February 24, Dr. R. Selvakumar did not observe any rust in the fields of CSAUA&T, Kanpur station as well as Dalip Nagar research farm. Leaf blight was observed in many wheat genotypes. On February 25, 2014, no rust was observed in NDUA&T, Faizabad and nearby farmers fields. No rust was noticed in BHU, Varanasi experimental farm (natural conditions) and nearby fields on February 25, 2014. Leaf blight was noticed in many wheat genotypes.

Peninsular Zone (PZ)

Dr. I. K. Kalappanavar (UAS, Dharwad) reported leaf rust appearance in Dharwad area on var. Amrut. Shoot fly incidence was severe at Dharwad in mid January. Dr. B. K. Honrao (ARI, Pune) reported leaf rust in TPN nursery on January 22, 2014 on varieties, WL 711(TS), C 306 (5S), and Agra Local (TS) planted at Pune. By 3rd February, it had spread on more varieties and ARI germplasm (WL 711, HD 2329, Agra Local, Lal Bahadur, C306, WH 147, HD 2160, BARI 82, BARI 102, Kenphad 25 and *T. sphaerococcium*) with severity ranging from TS to 40S. Black rust was not observed in farmers fields as well as in Trap Plot Nursery in Pune area till February 28, 2014. On Jan. 13, leaf blight was observed in varieties, Kharchia mutant, Bijaga Stripe, A 206, NI 973 and NI 146 at ARI, Pune. On 30th Jan., leaf blight was observed at farmers fields on varieties, Gold 21 and Gold in villages Sakharwadi and Phadtarwadi (Satara). On January 31, 2014, leaf rust (5-60S) was observed on off types in villages Murum, Songaon, Malad (Baramati, Pune) and in villages, Sakharwadi, Phadtarwadi, Phaltan, Sangavi, Shirseni, Lonand (Satara). By February end, incidence of foliar blight was observed at ARI, Pune in many varieties *viz*; Agra local, Lal Bhahdur, Bijaga stripe, A 206, NI 146, Lok-1, Gold 21, ARI breeding material etc. with severity ranging from 12 to 79. Some traces of stem borer was observed in late sown crop at Hol farm. Dr. J. P. Tandon and Dr. S. C. Misra visited Dharwad and Gadag district in Karnataka state during Feb. 6-7. Natural incidence of leaf rust was observed on varieties, DWR 162 and off type mixtures on MACS 6222 with severity ranging from 30 to 60S.

Leaf rust (10S) was observed on January 29, 2014 by Dr S. G. Sawashwe (Regional Wheat Rust Research Station, Mahabaleshwar) in TPN sown at ARS, Radhanagri (Kolhapur) and College of Agriculture, Kolhapur on wheat vars., MACS 9 and Lal Bahadur. Leaf rust (TS-40S) was observed in off types plants at farmers fields in Western Maharashtra during 2nd fortnight of February. As per report received from Dr B C Game, Niphad, the first natural incidence of leaf rust was

observed in Wheat Disease Monitoring Nursery on Lal Bahadur variety on February 2, 2014, which increased upto 80S on Feb. 26, 2014. The incidence of stem rust was not seen in the nursery till February 28, 2014. Out of 20 genotypes in TPN, only HD 2329, HD 2160, HW 2021, HD 2204, C 306, HW 2008, DL 784-3, MACS 2496 and HW 971 were free from leaf rust. Incidence of stem rust has not been observed on the surveyed farmers fields in Nasik district. Dr. Indu Sharma also monitored the crop health in Dharwad (Karnataka) on February 18, 2014. The crop was very good in Dharwad area.

Training on wheat health management

A training course on Techniques and Procedures in Crop Health Monitoring and Field Evaluation of Host Resistance in Wheat and Barley was organized by DWR (Karnal and Flowerdale, Shimla) and DRRW project of BGRI for the co-operators of AICW&BIP at DWR, Karnal from January 29-31, 2014. In training programme, there were total 23 participants. 18 participants were from different SAUs, ICAR institutes and co-operating centres of DWR. Participants belonged to 12 states of India (Major wheat growing states): West Bengal, Karnataka, Tamil Nadu, Bihar, MP, Gujarat, Delhi, J & K, Himachal Pradesh, Uttarakhand, Punjab and Haryana. Most participants were young and there were three women participants also.

Acknowledgements

Thanks to all the co-operators of AICW&BIP, SAU's scientists, KVK's scientists and officers of State Department of Agriculture of various states for conducting extensive surveys and sending crop health reports.

Issued by: Crop Protection, Directorate of Wheat Research, Karnal-132 001
Compiled and Edited by: M. S. Saharan, Sudheer Kumar, R. Selva Kumar and Indu Sharma
Phone: 0184- 2266092, 2267490, 2267830, 2267495, **Fax:** +91-0184-2267390