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Wheat crop health was monitored during January-February, 2015 by scientists of Indian Institute of Wheat and Barley Research (IIWBR), State Agricultural Universities and State Department of Agriculture (Haryana, Punjab, HP, Uttarakhand, J & K). The detailed status of different diseases and insect-pest is given below:

### Punjab

- In 2<sup>nd</sup> week of January, Dr. P. P. S. Pannu, Dr.(Mrs.) Jaspal Kaur, Dr. Beant Singh, Mr. Gurinder Singh (PAU, Ludhiana), Mrs.Anju Bala (KVK Langroya, SBS Nagar), Dr. Ravinder Ghuman and Dr. Ashok Kumar (FASS & KVK, Ropar) observed one foci of infection of yellow rust each in villages of Chhidauri (on var. DBW-17) and Kharod (on var. HD-2967) in SBS Nagar and in Mohan Mazra (on var. HD 2967) in Ropar.
- During January 8-9, Dr. Sudheer Kumar (IIWBR, Karnal) and Dr. O. P. Gangwar (IIWBR Regional Station, Shimla) did not observe any rust in Ropar, Mohali and Ludhiana areas.
- Deputy Director (Training) KVK, Ropar reported appearance of yellow rust in the fields of Sh. Bhagvant Singh, Sh. Ajit Singh and Sh. Sarabjeet Singh of village Dakal, Ropar in variety HD 2967 on 29.1.2015.
- A team of scientists comprising of Dr Jaspal Kaur, Plant Pathologist, Dr Achla Sharma, Assistant Breeder, Dr Beant Singh, Assistant Entomologist, Wheat Section, Department of Plant Breeding and Genetics, PAU, Ludhiana surveyed the wheat crop on 13<sup>th</sup> February, 2015 in villages enrouting Ladhawal, Phillaur, Langroya, Balachour, Ropar and adjoining areas. In most of the areas the crop condition was good; however minor incidence of yellow rust was observed in few fields namely Langroya, Jagmeenpur, Rattewal etc. Minor incidence of aphid was also observed in all the places visited but it was severe in village Jagmeenpur (Ropar). In general, the wheat crop was healthy and free from all other diseases and insect pests.
- On February 18, 2015, Dr. Sudheer Kumar, IIWBR and Dr. Sujay Dutta, ISRO, Ahemdabad observed yellow rust at farmers fields in villages Pasredi Jatta Chamkaur Sahib, Morinda and Ropar. Disease foci were of 2 m<sup>2</sup> but one foci was of 80S in 100 m<sup>2</sup>.
- Survey of wheat crop for incidence of diseases was conducted by Dr P. P. S. Pannu, Sr. Plant Pathologist, Deptt. of Plant Pathology and Dr Jaspal Kaur, Plant Pathologist, Deptt of Plant Breeding and Genetics on 19.2.2015 on the route Ludhiana-Machhiwara-Rahon-Langroya-Saroya-Balachour-Ropar and adjoining areas. There was incidence of yellow rust in few villages on the route but from Langroya to Saroya, almost all the fields were infected with yellow rust but severity was very low ( upto 10S) except for the village Diyall where one field (var. HD 2967) around one acre was severely infected with yellow rust (60S). In

addition in the TRAP plot nurseries (TPN) sown at KVK Lngroya and KVK Ropar, symptoms of yellow rust were also observed. Brown rust upto 10S was also observed in entries in TPN planted at Gurdaspur.

### Haryana

- Dr. R. Selvakumar and Mr Ishwar Singh of IIWBR, Karnal visited the fields in Jagadhri on January 16, 2015. Stripe rust was observed (10 MS-S) in one field.
- Survey was carried out by Dr. R. Selvakumar, Mr. Ishwar Singh along with Dr. R. S. Taya, KVK, Damla in Yamunanagar area. In Munda khera village, Chhachhurali, stripe rust was severe (40-60S) in 10m x 7 m area in the early sown crop (var. Barbat). The late sown crop is having few plants infected with yellow rust. In another field of Mr. Joneykumar, Pahadipur village, Sadhaura, Super 172 was infected with stripe rust (trace-10MS). The other fields were free from any rust.
- On 27<sup>th</sup> Jan. 2015, Mr. Vipin Panwar, SRF, IIWBR, Karnal visited the TPN nursery planted at KVK, Saharanpur and no rust was observed.
- On 28<sup>th</sup> Jan. 2015 Dr R. S. Taya informed about the appearance of yellow rust on variety HD 2851 at one farmers field in village Mahua Kheri, Babbain (Kurukshetra).
- Dr. Girish Naybal, DDA, Ambala informed on 31.1.2015 for appearance of yellow rust on the field of Sh. Sunder, village chhapra, Ambala.
- Dr Indu Sharma, Director, IIWBR and Dr. M.S. Saharan observed yellow rust (10S) in variety HD 2967 at Jaloda, Yamunanagar on 9.2.2015.
- Dr. Mangal Singh, IIWBR, surveyed Yamunanagar area on 12<sup>th</sup> Feb. 2015. Yellow rust was observed only at Bharwabgarh, Budhia (5S) and Fatehgarh (20 - 40S) villages.
- Dr. R. S. Beniwal surveyed the districts Hisar, Fatehabad and Sirsa on 5.2.2015. In Hisar district, there was no yellow rust. Yellow rust was noticed in village Ding on HD 2851 in Sirsa district in traces. There was no yellow rust incidence in Panniwala Mota and Bhagsar. No rust was observed in villages Matana, Dharnia, badopal and Kharakheri (Fatehabad).
- On the way from Delhi to Chandigarh on Feb. 17, 2015, Dr S C Bhardwaj, Head, DWR Regional Station, Flowerdale, Shimla and Dr Sujay Dutta surveyed the wheat fields. On the way from Chandigarh to Karnal via Yamunanagar, yellow rust was observed in five fields. These were only 1-2 sq m foci on susceptible varieties.
- Dr. Sudheer Kumar, IIWBR and Dr. Sujay Dutta, ISRO, Ahemdabad observed some patches of yellow rust at village Khukhari Near Bilaspur (Yamunanagar) on Feb., 18, 2015.
- Mr. Surendra Singh, ADO and his team reported yellow rust in the village Shargarh (Karnal) on 19.2.2015.
- The detailed report received from Dr. Madan Mohan Singh, Project Director ATMA-cum-Deputy Director of Agriculture, Yamuna Nagar is depicted below:

S.N	Name/Father	Village/Block	Variety	Date of rust Incidence observed
1.	Jasmer Singh/ Raghubir Singh	Rampur Majra/ Jagadhri	HD-2967	10-01-15
2.	Jitender Singh/ Devender Singh	Maheswari/ Mustafabad	Puskar-67	19-01-15

S.N	Name/Father	Village/Block	Variety	Date of rust Incidence observed
3.	Raj Kumar/ Kapoor Chand	Jai Rampur Jagir / Jagadhri	HD-2967	19-01-15
4.	Joney Kumar/ Kuda Ram	Pahadipur/ Sadhaura	Super-172	20-01-15
5.	Ajit Singh/ Jagmal	Munda Khera/ Chhachhrauli	Barbat	21-01-15
6.	Satpal / Krishan Lal	Bakala/Sadhaura	HD-2894	21-01-15
7.	Gurpreet Singh/ Narender Singh	Sultanpur/ Sadhaura	HD-2894	23-01-15
8.	Devender/Gopi Chand	Kaptan Majri/ Sadhaura	HD-2894	02-02-15
9.	Amarjeet/Mam Chand	Sarawan/ Sadhaura	Puskar-67	02-02-15
10.	Jagir Singh/ Jhandu Singh	Sabapur/ Sadhaura	621-50	02-02-15
11.	Alim/Niaz Mom	Ratli/Sadhaura	Super-172,	04-02-15
12.	Aslam/Moh. Sadik	Sarawan/ Sadhaura	HD-2967, HD-2894	04-02-15
13.	Karanpal/Balbir	Kot Mukarmpur/ Chhachhrauli	HD-2967	04-02-15
14.	Luxman Singh/ Ram Singh	Topra Kalan/ Sadhaura	HD-2967	04-02-15
15.	Gian Singh/ Banarsi Dass	Topra Kalan/ Sadhaura	HD-2967	04-02-15
16.	Satpal/Parsa Ram	Topra Kalan/ Sadhaura	HD-2967	04-02-15
17.	Raj Kumar/ Sunder Lal	Topra Kalan/ Sadhaura	25+2	04-02-15

### Himachal Pradesh

- On Jan.10-11, Dr. S. C. Bhardwaj surveyed different areas in Shimla, Solan and Bilaspur districts of HP. The wheat crop was in good condition and free from rusts.
- Dr. S. K. Rana, Malan, Palampur conducted surveys in parts of Bhavarna, Nagrota Bagwan, Kangra, Dehra, Rait, Nagrota Surian and Fatehpur blocks of district Kangra during the last week of January. Yellow rust was recorded with minor incidence and severity less than 10S on PBW 550 at Nagrota Suria Dam area (Nagrota Surian block) and HD 2967 at Lunj Kahlian (Kangra block) and Bhanth (Fatehpur block). However, the disease was observed in severe form touching severity 60S on varietal mixture (Raj 3765 main) in a large patch (Focus) at Bhanth-Sthana (Fatehpur block). Wheat Disease Monitoring Nursery/ Trap Plot Nursery of wheat planted at SAREC Kangra, was found free from rust in the last week of January. Powdery mildew was recorded in severe form (5-6 on 0-9 scale) on varietal mixture (Raj 3765 main) at Bhanth-Sthana in Fatehpur block. Flag smut was also recorded at some locations in Nagrota Surian, Kangra and Fatehpur blocks with incidence varying from 2-7%. Yellowing of wheat crop due to water stagnation and low temperatures was observed at few locations

especially under Rice- wheat system. The grasses in vicinity of fields were critically examined/ observed for rusts, especially yellow rust but no rust was found.

- Survey was conducted by Dr Dhanbir Singh, Principal Scientist (Plant Pathology), CSKHPKV HAREC, DhaulaKuan during the last week of January in Nahan and Paonta blocks of Sirmoor. No yellow rust appearance was noticed in the farmers field. However, yellowing of crop was recorded due to water stagnation in some fields near Kodhanwala. Severe attack of cut worms was recorded in one field in Khadar near Kolar village. Good rains were received during Jan. and low temperature was recorded with foggy weather. The crop condition was excellent in all the areas under survey. In hilly areas, crop condition was poor due to delayed sowing in rainfed areas. No rust and other diseases were recorded in Trap and SAARC nurseries.
- Dr. Dhanbir Singh, conducted survey in Nahan and Paonta Blocks of Sirmour district on 4.2.2015 for recording the appearance of wheat diseases. Yellow rust was noticed in Barotiwala (Paonta) on wheat variety HD 2967 at 3-4 locations in traces. Yellow rust was also recorded in traces on local variety in village Shivpur. High severity of yellow rust up to 60S was recorded on HD 2967 and HD 2380 in village Bharapur on 16.2.2015. Similarly, high severity of yellow rust up to 40S noticed in village Kolar at three locations. However, mild incidence/infestation of powdery mildew and aphids were recorded in both the blocks under survey. Yellow rust in Trap and SAARC nurseries was recorded on 10.2.2015 on wheat varieties WL-711 (10S), HD-2329 (5S), Agra local (10S), HW2021 (10S), Lal Bhadur (10S), Kharchia mutant (10S), HP-1633 (5S), WH-147 (10S), Anna Purna (5S), HD 2189 (10S), Pak 81 (5S) and susceptible check (30S). Good rains were received on 18 & 19<sup>th</sup> February.
- Director Agriculture, Himachal Pradesh informed the status of yellow rust regularly during January-February. Yellow rust was reported from some places of district Bilaspur, Hamirpur, Kangra, Mandi, Sirmour and Una was in traces during 1<sup>st</sup> week of February. During 2<sup>nd</sup> week of February, yellow rust was observed in traces in Bilaspur (villages, Nanawan and Bhatoli), in Mandi (villages, Mehar, Surahi, Tandul), in Una (villages, Adarsh Nagar, Amb, Athwan, Krishna Nagar, Busal, Dehar, Badoh, Jalgran) and in Sirmour (villages, Dhaun, Bhangani, Nagal, Phoolpur, Shivpur, Subhkhera, Surajpur).

#### **Jammu & Kashmir**

- On 8<sup>th</sup> January, 2015, Dr. M. K. Pandey surveyed the areas in the route starting from Anand Nagar to Udhywalla via Puni chak, Sari Rakhawllan, Gao Manahansa, Gajansoo and Marh. The presence of any yellow rust was not observed in any of the field of the farmers in the surveyed areas except two small pustules of brown rust and one pustules of yellow rust was observed in SAARC and TPN nursery ( Village- Saharan) on Agra Local.
- An extensive survey was carried out on 25<sup>th</sup> & 26<sup>th</sup> January, 2015 by Dr. M. K. Pandey, SKUAS&T, Jammu. On 25<sup>th</sup> January, 2015, fields were surveyed the areas in the route starting from Anand Nagar to Udhywalla via Puni chak, Sari Rakhawllan, Gao Manahansa, Gajansoo, Jiri and Mishriwalla (Jammu). During survey, stripe rust was observed on PBW-175 with some pustules with 5S severity at Lalyal Camp (Jammu) at the field of Yash Paul Sharma. One field of Oats was also severely affected with stripe rust and blight with 80S and 40% severity respectively. On 26<sup>th</sup> January, 2015, fields were surveyed in Jammu,

Kathua and Samba areas via Raipur, Khandwal, Chatha, R S Pura, Saikalan Ramgarh, Chadwal Rajbag and Khanpur. The field of Taj Ram (Chak Gogal) of wheat variety HD-2967, stripe rust was observed in 2-3 patches with 20MS severity. One field of Bal Dev Singh (Nagari, Kathua) many foci of stripe rust with severity of 10-20MS were observed. One field in Arnia of unknown wheat varieties was also infected with stripe rust (0.05 ha) with 10-20S severity. Stripe rust was also observed on wheat varieties HD-2967 and RSP-561 with 10-20MS severity in 4-5 patches (1 meter) in experimental field of Chatha, SKUAST - Jammu on 20<sup>th</sup> January.

- On February 10, 2015, The farmer's fields were surveyed by Dr. Sudheer Kumar along with Dr. Vaibhav Kumar Singh, Scientist (Plant Pathology), Division of Plant Pathology, IARI, New Delhi and Dr M.K. Pandey, Scientist (Plant Pathology), SKUAST-Jammu observed four farmers field patches of yellow rust in Jammu and Samba district in Jammu region. These patches were of 2 - 10 m<sup>2</sup> with the severity of 10-60S. In area surveyed all the fields were found free from yellow rust infection.

### **Uttarakhand**

- Dr. Deepshikha, JRO, Plant Pathology, Dr. J.P. Jaiswal, Professor, Genetics and Plant Breeding and Dr. Kanak Srivastava, STA/Jr. Scientist, Plant Pathology surveyed Distt. Udham Singh Nagar Bazpur (Talli farm, Karbola and Doraha), Kashipur (Jaitpur, Jaganathpur and Bhogpur), Gadarpur (Mukundpur, Bagwala and Bhagwanpur), Dineshpur (Durgapur, Anandkhera and Makrandpur mauza), Rudarpur, Kichha (Shankar farm and Pulbhatta), Sitarganj (Gurunanak Farm, Manjeet farm, Kathni, Karghata and Khempur), Sara Saria, Nanakmatta and Khatima (Jhankat and Jungle Jogi kher), Kathgodam (Devlatalla, Madanpur, Golapar, Sitapur and Kuwarpur) and Gorapadao (Haripur Tularam) of Uttarakhand for yellow rust during January 21-23, 2015. No rust or any other insect pest was observed in any field. It was observed that small farmers of Sitarganj, Nanakmatta and Khatima are predominately growing rust susceptible varieties PBW 343, UP 2338 and PBW 373.
- Wheat crop was monitored for rust in the farmers' field by Dr. Deepshikha, JRO ; Dr. Kanak Srivastava, STA Plant Pathology and Dr. Anil Kumar, J.R.O., Genetics and Plant Breeding on 16 Feb 2015 enroute Rudarpur (Vill. Jafarpur, Premnagar and Narainpur), Dineshpur, Gadarpur (Mukundpur, Langra bhoj, Motipur, Abadnagar, Kundan nagar and Chunpuri), Bajpur (vill. Bajpur, Tanda Azam, Maheshpur Doraha, and Namoon), and Bajpur (Vill. Khalo farm and Dehori yadav farm). The varieties sown in the areas were WH 1105, HD 2967, PBW 550, PBW 502, PBW 226, PBW 154 and PBW 343. The crop health was good, in some places yellow rust was observed in traces. One of the farmer's field at village Chunpuri (Gadarpur) yellow rust was observed in patches showing severity of 70S in PBW 343 (1Ha). On 18 Feb., 2015, area between Pantnagar and Khatima enroute Kichha (Vill. Shankar farm (Bhanga), Chacher farm, Pipalia and Gurunanak farm (Bari), Sitarganj (Katangari, Bara, Jungle jogi ther and Nakha farm), Nanakmatta and Khatima (Vill. Sara Saria, Jhankat, and Lohiyapul) were surveyed. Varieties sown in these areas are HD 2967, PBW 550, WH 711, PBW 226, DBW 17, PBW 343, PBW 373 and PBW 154. Yellow rust was in trace and in some area powdery mildew was also noticed. Survey was conducted from Pantnagar to Haldwani on 19 Feb, 2015, places visited were Golapar (Devlatalla, Kuwarpur naya gaon, Naya gaon Mehra and Sambal), Gorapadao (Haripur tula and Haripur punanand), Teenpani, Motinagar and Motahaldu. Varieties sown in

these areas were HD 2967, PBW 154, UP 2425 and DBW 17. One of the farmer at Motinagar had sown RR- 21 in one Ha. Overall crop was good, rust was not observed but between Pantnagar to Haldwani the problem of Powdery mildew was severe in many places. Survey reports were received from the Director, Agriculture, Uttarakhand regularly. No rust was reported during January-February in Uttarakhand.

### **Rajasthan**

- Survey was carried out on 14<sup>th</sup> and 15<sup>th</sup> January, 2015 in the area of Dausa and Jaipur districts by Dr K.K. Bhargava, Dr P.S. Shekhawat & Dr Nitin Chawla. None of the rust was observed in wheat and barley crop. However, 1-2 per cent incidence of flag smut was observed in variety Raj1482 and Raj 3077 at Lalsot area (Dausa) and in variety PBW 343 at Paota area of district Jaipur. In most of the area the wheat crop was at flag leaf stage (37-41 of Zadok's scale). Traces to 5 per cent Incidence of loose smut was noted in most of the barley fields having variety RD2035 and RD2552. Incidence of covered smut, *Drechslera* stripe and bacterial streak *in traces* were also noted in few fields of barley. The barley crop was at ear-head emergence to beginning of anthesis stage (54-60 of Zadok's scale). In some fields the early sowing crop of barley was facing infertility problem due to adverse effect of cold. Mild infestation of termite was also noted in few fields of wheat crop. Overall both wheat and barley crop were healthy in the area surveyed.

### **Maharashtra**

- Dr. B. K. Honrao conducted survey on 23<sup>rd</sup> and 30<sup>th</sup> January covering Ahmednagar district (Shrigonda, Loni and Belwandi) and Baramatitluka of Pune district area respectively. First natural incidence of leaf rust was found in ARI germplasm nursery on 2<sup>nd</sup> February 2015. (varieties:- Agralocal, Morocco and *T. turgidum* sp. zukovsky). No natural incidence of rust was observed on farmer's fields. Incidence of foliar blight was observed in farmer's fields in Shrigonda area. Foliar blight incidence was also found on varieties like HD 2204, HW 2021, WH 147, LalBahadur, Gulab, HD 2189 and entries in coordinated trials .Viz. N-2-14, N-2-15, N-2-17, N-2-34, N-4-26 etc. with severity ranging upto 35. Aphids were observed in majority of farmer's fields with low to high population. In TPN nursery, foliar blight was observed and leaf rust just started appearing on Agra local (traces). Dr B C Game, Jr. Wheat Pathologist, Agricultural Research Station, Niphad visited the wheat disease monitoring nursery sown at Pimpalgaon Baswant on January 15, 2015. The nursery was free from rust. Incidence of leaf blight was recorded on two entries viz., WL 1562 (03) and HW 2021 (02). Survey was undertaken by Dr. B. C. Game and Mr.V. S. Pawar, Sr. Research Asstt. (Pathology) in Dindori and Surgana tehsils of Nashik district (Maharashtra) on 29/01/2015 for monitoring rust and other diseases of wheat crop on farmers field. The villages visited were, Materewadi, Jopul, Rajapur, Varkheda, Parmori, Lakhmapur, Karanjvan, Pimperkhed, Sangpada, Pandane and Sarat. The varieties grown in the area were NIAW 917, NIAW 34, Lok-1, Ajay 72, Ajeet 102, Mohan wonder etc. Incidence of rust was not observed in any field from the area surveyed. Majority of the fields were found infested with aphids. Leaf rust was observed on January 28, 2015 at the field of Mr. Santosh Shankar Gaikwad of village Kenjal (Satara), Maharashtra on var. Lok-1. On Feb. 16, 2015 Dr.Indu Sharma, Director, ICAR-IIWBR and

Dr. R Chatrath, ICAR-IIWBR surveyed Farmers fields in Rahuri areas and observed no rusts.

### Central Zone

- On January 28, 2015, Dr. M. S. Saharan and Dr. Upkar S. Sadana, National Consultant (Soil Science), National Food Security Mission, DAC, New Delhi alongwith State Department Officers of Bhopal visited the farmers fields near to Bhopal. No rust was observed. During Feb. 13-14, 2015 Dr.Indu Sharma, Director, ICAR-IIWBR surveyed Junagarh and Dantewara areas for appearance of any rust in the field. No rust was observed. During 16.2.2015 to 18.2.2015 a monitoring team comprising Dr. R. Selvakumar and Dr. Jogendra Singh from ICAR-IIWBR and Dr. Shekhawat from ARS, RAU, Durgapura visited farmers fields in SK Nagar (Gujarat), Udaipur (Rajasthan), Banswara (Rajasthan) and Kota, Rajasthan. There was no rust incidence in any of wheat and barley crop in the visited areas. Leaf blight and foliar aphids were present in few areas. On 25<sup>th</sup> Feb. 2015 a monitoring team comprising Dr. R. Selvakumar and Dr. Vishnukumar from ICAR-IIWBR visited the farmers' fields as well as field trials in Mathura, Morena districts in Uttar Pradesh. There was no rust incidence in any of wheat and barley crop. In few plants leaf blight was observed. Foliar aphid is also emerging in few fields. On the same day farmers fields and experimental farm in Gwalior (Madhya Pradesh) were visited. The fields were free from rusts. Only leaf blight and foliar aphids were observed.

**Strategy Meetings:** Strategy meeting for managing stripe rust and Karnal bunt was organized by DAC, New Delhi at Panchkula on January 20, 2015. Dr. J. S. Sandhu, Agriculture Commissioner, G. O. I. chaired the meeting. Dr. Indu Sharma, Director, IIWBR, Karnal made presentation on stripe rust and Karnal bunt management. A meeting for reviewing the status of Karnal bunt management was organized by DAC at Bhopal on January 28, 2015. Dr. J. S. Sandhu, Agriculture Commissioner, G. O. I. chaired the meeting. Dr. M. S. Saharan, Principal Scientist-Plant Pathology, IIWBR made presentation on Karnal bunt management.

### **Advisory for stripe rust management for northern states (Punjab, Haryana, Western UP, Uttarakhand, HP, J & K)**

Stripe rust advisory is again circulated:

Keeping in view the recent rains in last week of February, 2015 and favorable temperature / humidity for stripe rust development, if farmers observe yellow rust in their wheat fields, one spray of Propiconazole 25EC (Tilt 25 EC) @ 0.1 per cent be given at the foci of infection to avoid its further spread. One ml of chemical should be mixed in one litre water and thus 200 ml of fungicide mixed with 200 L of water should be sprayed in one acre wheat crop. If need, farmers are advised to repeat the spray. Farmers should spray the crop when weather is clear i. e. no rain, no fog / dew etc.

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