

Report of the Side Event

Monitoring and Surveillance of Cereal Crops Pests, Diseases and Weeds in CWANA Region

30 April 2014

Izmir, Turkey

The side event on Monitoring and Surveillance of Cereal Crops Pests, Diseases and Weeds in CWANA Region was held by the Sub-regional Office for Central Asia (FAO-SEC) in cooperation with Regional Office for the Near East and North Africa (FAO-RNE) of the Food and Agriculture Organization of the United Nations during the 2nd International Wheat Stripe Rust Symposium on 30 April 2014 in Izmir, Turkey.

The objective of the side event was to review the activities on monitoring and surveillance of cereal crops pests, diseases and weeds carried out in CWANA Region by FAO Offices in cooperation with CIMMYT, ICARDA and National Agricultural Research Systems (NARS). 33 participants comprising of researchers, experts from more than 14 countries and CIMMYT and FAO Officers attended the meeting.

Prof. Dr. Hafiz Muminjanov, Plant Production & Protection Officer (FAO-SEC), welcomed participants and opened the meeting, presenting the objectives and agenda of the side event. Dr. Alexey Morgounov (CIYMMYT), Dr. Fazil Dusunceli (FAO-AGP) and Dr. Shoki Al-Dobai (FAO-RNE) also welcomed the participants.

Mr. Bahromiddin Huseinov, Tajikistan, presented the overall results of the surveys conducted in Central Asia and Caucasus in 2013 and the first impressions for 2014 for the region. The country reports for Central Asia were presented by National Consultants of the Project and counterparts from respective countries: Eldar Mustafayev (Azerbaijan), Sandukash Babkenova (Kazakhstan, Akmola Region), Prof. Murat Koysibayev (Kazakhstan), Dr. Anvar Jalilov (Tajikistan) and Khurshid Turakulov (Uzbekistan).

Regarding Near East and North Africa, the country reports on the survey activities were presented by Ms. Rola El Amil (Lebanon), Ibrahim Imbaby (Egypt), Abdelkader Benbelkalem (Algeria), Abdall Mohamed Kurmat (Sudan), Farzad Afshari (Iran), Emad Al-Maarroof (Iraq) and Abdelhamid Ramdani (Morocco).

After the country reports a discussion session on further planning was performed. A questionnaire on the activities of monitoring and surveillance of cereal crops pests, disease and weed was disseminated to the experts from countries. Dr. Fazil Dusunceli, FAO-Rome, presented the approach of FAO on the management of wheat rusts to ensure the Food security for people in the world. He highlighted the importance of cereals as a stable food for the people in the regions and the risk of epidemics of wheat rusts that can result in serious food losses. The collaboration between all stakeholders was emphasized as well as the need for its improvement by relevant institutions at national and international level. The role of communication informing the policymakers on the importance of the wheat rusts and the risks was also highlighted. Dr. Muminjanov stated that the Survey in Central Asia was carried out for the last two years and this year it will be continued. Based on the three year results and findings, special and general report will be developed and will be submitted to all stakeholders, including ministries and policy makers. This is not only survey of diseases, pests and weeds, but it also covers farming practices, such as crop management, use of pesticides etc.

Currently, surveillance of cereal crops in Central Asia and Caucasus are conducted according to uniform methodology. For this purpose a special Guideline on “Monitoring and Surveillance of Diseases, Pests and Weeds in Cereal Crops” and survey forms were developed in Russian, which were demonstrated to the participants of side event. Participants from Near East and North Africa requested to translate the manual to English for their use.

Dr. Alexei Morgounov, added that, currently samples of major and perspective varieties from Central Asia are under the screening for Steam Rust race UG99 in Kenya and for Yellow Rust, Leaf Rust and Common Bunt in Turkey.

Dr. Amor Yahyaoui, Plant Pathologist, CIMMYT, thanked Dr. Muminjanov for organizing a side event, which was great opportunity to share experience, learn from each other, and collaborate. As a suggestion he gave an advice to use local races of rusts for artificial inoculation in breeding programs and variety testing trials.

Dr. Dave Hodson, GIS Specialist of CIMMYT, mentioned about early warnings, and its importance for managing the rusts in early stages.

Prof. Koyshibayev thanked FAO and other partners of the project and suggested to publish findings in practical and public journals, which he believes will be useful for producers.

Dr. Fazil Dusunceli, highlighted importance of coordination among the national institutions and collaboration at Regional level for more effective surveillance and management of wheat rusts.

Recommendations arising from the side event on surveillance:

- The best way to control rusts is use of resistant varieties. Therefore rust resistance should be considered as important criteria in breeding, variety registration, seed systems and wheat production.
- Adequate emphasis should be given in production to aspects of rust diseases, both in terms of surveillance and crop management.
- Continuous surveillance and monitoring at field level is essential to facilitate early warning and rapid response to avoid losses.
- Exchange of information and experience is important and in this regard cooperation with the Global Rust Monitoring System (through Dr. Dave Hodson, GIS Specialist of CIMMYT) should be strengthened.
- Collaboration among the concerned institutions is essential at national and regional level. For effective surveillance and management of rusts development of national strategies, management plans and coordination frameworks are recommended.

Annex: Annotations from the side event on surveillance meeting regarding status of rust diseases in Central Asia and Near East

The summary notes presented during the meeting regarding the status of rusts in the countries included following (combined with those from the main symposium):

Central Asia and Caucasus:

Almost all countries in Central Asia and Caucasus report that YR is the major disease in the region. Six epidemics were effective in 1999, 2003, 2005, 2009, 2010 and 2013 and widely grown Krosnadar variety is affected significantly. Surveillance activities in 2013 in Central Asia indicated sunn pest as major insect pest while yellow rust was observed sporadically in some countries. Harmonized forms and sampling procedures will be followed for surveillance in 2014.

Kazakhstan: Most wheats are spring types and grown in 4 regions. Rust surveys are carried out in context of general phytosanitary surveillance. For 2014 the season is too early for indication of rusts. However in general, rusts arrive from the direction of Uzbekistan and Septoria could be problem in certain parts. In the north stem rust and septoria are dominant. Rusts did not develop much but Cladosporium was problem in some parts due to high humidity. Seed treatment is common and fungicides are applied in around 10% of the sowing area.

Tajikistan: Around half of wheats is spring types and in 2013 yellow rust was severe, causing 70% yield loss on susceptible varieties. Due to weak seed system and insufficient amounts seeds were imported from Russia without testing and high severity of yellow rust was recorded causing 10-20% yield losses. In 2014 yellow rust began appearing as of 20th April due to good rains in March. If this continues yellow rust risk will be high. Fungicide application becomes only economic in high yielding areas with yields of 2.5 ton/ha or more.

Azerbaijan: 46 fields in 12 regions were surveyed. Septoria, powdery mildew, thrips, aphids and loose smut were present at some degrees but yellow rust was at high severity. In addition, BYDV and Cereal Yellow Dwarf Virus and Wheat Mosaic Dwarf virus were observed in certain locations

Uzbekistan: Three routine surveys took place in April - May 2013. YR was severe in south and Semarkand and fungicide sprays were common and stopped the spread. Strict follow up by government offices through prevented further loss. For the first time crown rot and take all was recorded as a severe problem. 10 ha was affected by this. (Additional notes from the main symposium: Yr is the most important disease followed by LR. Strong national strategy and strict government control and village based extension presence are effective and 70% of possible losses are prevented. In 2014 yellow rust already started in Fergana valley posing a serious threat).

Near East:

Lebanon: Almost 80% of wheat is durum wheat but government is planning to increase share of bread wheat. Three rusts are important and TKTT race of SR (which is responsible for epidemics in Ethiopia) was recorded last year and considered as a risk for future. In 2014 Yellow rust started appearing 10 days ago in experimental and farmer fields. Collaboration exists with IAEA.

Yemen: There is a wheat year around and this enhances vulnerability to rusts. Surveillance and Farmer Study Groups facilitated by FAO were very useful.

Morocco: In general LR and YR are among the major biological threats for wheat production and in 2013 they affected wheat areas heavily. National awareness raising and planning efforts facilitated timely response including aerial sprays.

Egypt: The three rusts are among the main problems, leaf rust being the most significant followed by stem and yellow rust. Losses due to LR can reach 50% if no fungicides are used. Stem rust increased last year affecting also some previously resistant varieties but Ug99 is not present. Though five YR races were identified in 2013 YR was not wide spread. In 2014 first surveys were made March and second in April and YR seems to appear more widely than last year.

Algeria: Durum wheat is dominating. YR is the major problem. Two surveys are made with the Plant Protection Services. Each week meetings are organized with the awareness committee. In 1995, 2004 and 2009 epidemics affected 80% of the areas of mega varieties. In 2014 YR has just begin to appear. In general BYDV, septoria and tan spot are among the other diseases that are present.

Sudan: Tolerance to drought, salinity and rusts are among the major criteria for breeding. During the surveys of March and April of 2014 SR was recorded at New Halfa with high severity and at Gezira with low severity.

Additional notes from the symposium:

Ethiopia: Wheat is produced at altitudes of 1550 - 3000 m and Green bridges make wheats vulnerable to rusts. During the 2010 YR epidemics 1 million tonne wheat was lost. TKTT race of stem rust affected large areas in 2013 and poses serious risk this year. On 17 April SR already started developing in Debre Zeit. Awareness raising, fast seed multiplication, rapid fungicide applications are essential for protection from rusts.

Pakistan: Surveys are carried out by national teams. In 1994 Loss due to YR was 2.7 million USD. In variety release processes disease resistance is considered as criteria. First national committee then local committees approve varieties. However only 20 % of seeds used are certified. Surveys are carried out by national teams. National travelling seminars facilitate dialogue between researchers and farmers and increase awareness. Under heavy infections even fungicides would not prevent completely damage by rusts.

Iran: Wheat is produced in 4 major regions. Last 5-6 years drought has been severe. In general YR is the most important of rusts. Fungicide sprays are practiced when necessary. In 2013-14 YR appeared for the first time during winter in south. Ug99 is considered as a significant threat but currently is restricted.

China: Sever YR epidemics affected crops in 1990, 2002, 2009 in 6.5, 5.6 and 5.8 million ha respectively. Role of Berberis in sexual reproduction of YR has been demonstrated.

Summary results of the Questionnaire and arising recommendations:

A survey form was filled in by country representatives to collect some information regarding the status and aspects of wheat rust diseases. In total, 20 colleagues participated from 14 countries in the survey. Below are some preliminary outcomes and recommendations arising from this questionnaire:

- Of the 14 countries all indicated 1% or more production loss in 2013 except one (5 reported 3-5% loss, 6 countries 3-5% and 1 more than 5%).
- In 2014, 12 countries already observed rust diseases in farmer fields, most at low levels but few with significant severity.
- 11 countries indicated YR resistance as objective in breeding programmes, 6 resistance to LR; and 6 to SR,

- 7 countries indicated up to 5% production area being sown to resistant varieties, 4 between 5-20% and 5 more that 20%;
- All countries, except two, indicated lack of a documented strategic plan or structured coordination mechanism.
- With regards to priority activities for future countries differed in their priorities. There was a general emphasis on the need for development of strategies / management plans, coordination / collaboration frameworks and support for surveillance.
- Importance of work on breeding, variety registration, seed production, fungicide applications and training (training o farmers as well as technical training on specific areas such as surveillance, scoring, race analysis, breeding) were also highlighted with different levels of priority by different countries.
- In addition, the need for capacity building and regional project