



Food and Agriculture  
Organization of the  
United Nations

*Associate researcher from  
Lebanon is empowered  
with the training required  
to build up Lebanese rust  
research facilities*

# STORIES OF CHANGE



How to combat wheat rust diseases  
in Central and West Asia and North Africa:  
developing synergies and countries' capacities

## HOW TO COMBAT WHEAT RUST DISEASES IN CENTRAL AND WEST ASIA AND NORTH AFRICA: DEVELOPING SYNERGIES AND COUNTRIES' CAPACITIES

Wheat rust diseases (yellow, stem and leaf rusts) pose a serious threat to food security around the world. The decline in wheat production severely affects the food chain. The wheat-producing countries in Central and West Asia and North Africa (CWANA) are particularly vulnerable to these diseases because new races frequently appear.

Without continuous surveillance to ensure effective monitoring and disease control, CWANA countries may face substantial grain yield losses. Strong national capacities, international collaboration and information-sharing are essential to achieve successful disease management at the regional and global level.

FAO, as a member of the Global Rust Initiative (BGRI), works with its international and national partners to support countries in developing capacities for disease surveillance and management. In collaboration with the International Centre for Agricultural Research in the Dry Areas (ICARDA), FAO has facilitated trainings on surveillance, race analysis and management of wheat rust diseases at the Regional Cereal Rust Research Center (RCRRC) in Izmir, Turkey.

In the last three years, over 50 national officers from Azerbaijan, Iraq, Iran (Islamic Republic of), Kazakhstan, Kyrgyzstan, Lebanon, Morocco, Tajikistan, Turkey and Uzbekistan have been trained at the RCRRC, which was established as a collaboration between ICARDA and Turkey.

Rola El Amil, an Associate Researcher from the Lebanese Agricultural Research Institute (LARI), was among the trainees who attended the training course in 2018. Together with her peers, she was trained in the management and surveillance of rust diseases and race analysis, especially regarding yellow rust.

The training sessions included theoretical and practical sessions covering topics related to disease management, such as breeding for resistant varieties, surveillance methodologies, race analysis and field screening techniques. After the workshop, trainees carried out surveys in their respective countries, and collected and sent rust samples for race analysis to RCRRC to map emerging wheat rust races.

***“The rusts often affect our wheat crops and we need to monitor the disease continuously. The training gave me the opportunity to learn and practice techniques in surveillance and race analysis of the rusts, evaluation of breeding germplasm for seedling and adult plant resistance, and disease management,”***

Rola said.

***“As a result of this training, I am leading the rust programme in Lebanon, covering rust surveillance, race analysis and evaluation of resistance in breeding germplasm, and helping develop our national wheat rust management strategies,”*** she added.

Rola stated that the training provided information on the bases of cereal pathology, especially wheat rusts, from monitoring and scouting to the identification of the races and breeding for rust resistance. At national level in Lebanon, this training was essential to develop and improve officers' knowledge and the skills required to work on rust pathogens under glasshouses and field conditions.

Thanks to the training, Rola played a key role in building up the Lebanese rust research facilities, enabling the national program to undertake annual rust surveillance, data sharing, sample collection and hence pathotyping, particularly of yellow and stem rust races.

***“The new facility will help us at the national and regional level in terms of pathotyping; can help in basic training; and will complement the work of the Regional Cereal Rust Research Center”.*** Rola explained.

Today, the cereal rust laboratory at LARI is among the few race analysis laboratories in the Near East region that are actively involved in regional rust surveillance. The laboratory is autonomous in rust pathotyping. Other than Lebanon, only Iran and Egypt have the capacity to conduct this activity.

***“In addition to the technical training, it was through the FAO-supported rust training course that we were able to strengthen regional rust networking and sharing and exchanging information with other participants from this region,”*** Rola concluded.