



International Association for the
PLANT PROTECTION SCIENCES

IAPPS

NEWSLETTER

Number II

February, 2020

IV ALL-RUSSIAN CONGRESS ON PLANT PROTECTION WITH INTERNATIONAL PARTICIPATION

On September 9-11, the IV All-Russian Congress on Plant Protection with international participation “**Phytosanitary Technologies in Ensuring the Independence and Competitiveness of the Agricultural Sector of Russia**”, dedicated to the 90th anniversary of the All-Russian Research Institute of Plant Protection (VIZR) was held in St. Petersburg. The congress was attended by about 450 participants from many regions of Russia, as well as Belarus, Hungary, Germany, Kazakhstan, Norway, Poland, USA, Uzbekistan, Finland, Sweden and Japan. A significant part of plenary and section reports was focused on the most essential problems of various areas of plant protection. In particular, Karakotov S.D. (“Shchelkovo-Agrochem”) made a report on current trends in the creation of plant protection products. Dolzhenko V.I. (VIZR) summed up and outlined the prospects of chemical plant protection. The plenary reports on biological plant protection were presented by V. V. Glupov (Institute of Systematics and Ecology of Animals) “On the importance of studies of interaction mechanisms in plant-phytophage-parasite system for the development of biopreparations” and V.Ya. Ismailov (All-Russian Research Institute of Biological Plant Protection), N.A. Belyakova (VIZR) “On the use of entomophages in intensive plant farming and organic farming”.

The problem of genetics of plant resistance was discussed in four plenary sessions and in the section “Plant resistance to pests”. Plenary reports were devoted to the results of studies on the expansion of the genetic diversity of crop resistance to diseases and global trends in plant breeding associated with the use of new technologies for identifying and mapping genes for plant resistance to diseases, genomic editing, and genomic selection in plant breeding (O.S. Afanassenko, VIZR; E.K. Khlestkina, Vavilov Institute of Plant Genetic Resources).

Oral and poster reports at the Phytosanitary Monitoring and Forecast section showed studies and monitoring results of various pests: sunn pest, beet webworm moth (*Loxostege sticticalis*), wheat thrips, mites, bark beetles; potato rot, brown wheat rust and winter wheat root rot, speckled leaf blotch of wheat, different sunflower diseases, phytopathogenic bacteria, phytoplasmas; and weeds segetal communities.

During the work of the “Plant Pests” section, various aspects of entomological science, both fundamental and applied, were presented: ecology, physiology, behavior, pathology of insects. Particular attention in the work of the section was paid to the analysis of existing and the prospects of new directions in the development of effective and environmentally friendly systems for protecting plants from harmful insects. In a report by Hungarian scientists M.Toth and J. Molnar, “Development of semisynthetic lures for catching both females and males of pest Lepidoptera: summary of research efforts in Hungary” the impressive results obtained at the Hungarian Institute for Plant Protection (Budapest) were presented.

At the section “Plant Diseases” the results of the mycological and phytopathological studies of cereals, vegetables, oilseeds and lawn herbs were presented alongside with methods for their

protection. Because of their increased distribution and harmfulness, there was a need for monitoring the species composition of the *Fusarium* fungi, which will provide the information on the distribution of their most toxigenic representatives. The deterioration of the phytosanitary situation in artificial agricultural ecosystems necessitates the implementation of protective measures and the selection of new biological and chemical fungicides (E.I. Burlak; D.P. Kiryanov, LLC KOPPERT RUS; Kuznetsova M.A. et al., All-Russian Research Institute of Phytopathology; T.E. Espevig, Norwegian Institute for Bioeconomic Research). Total of 23 reports were devoted to the etiology, diagnosis and control of viral, bacterial and nematode plant diseases.

In the section "Integrated Plant Protection: Engineering, Organizational and Economic Aspects" 10 reports were made, which were devoted to the following issues: ways to optimize phytosanitary technologies; precision farming systems for plant protection; databases and programs for managing the phytosanitary process in plant protection; mechanization of technological processes of plant protection; the use of UAV for remote monitoring and application of plant protection products; cereal protection systems; integrated potato protection systems; protection systems in botanical gardens and greenhouses.

This year, the organizers of the congress for the first time formed a new section dedicated to the molecular biological studies in plant protection. First of all, two reports of St. Petersburg researchers (Malovichko Yu.V. et al.) dedicated to the genomic, proteomic and bioinformatic analysis of insecticide toxins and other pathogenicity factors of the bacterium *Bacillus thuringiensis*. A group of researchers from VIZR (Dolgikh V.V. et al.) presented an interesting report on the possibility of using recombinant single-chain mini-antibodies in plant protection. Congress organizers thank the sponsors and the Russian Foundation for Basic Research (RFBR project 19-016-20017) for financial support.

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REGIONAL CONFERENCE ON FALL ARMYWORM

Under the patronage of HE Mr. Roch Marc Christian Kaboré, President of Burkina Faso, a regional conference on Fall Armyworm (FAW) was organized in Ouagadougou from 10 to 12 September 2019. The theme of the conference was : « Invasion of Sahel and West Africa by the FAW : status, solutions and available resources to counter the pest ». This conference was organized by the Permanent Inter-State Committee for Drought Control in the Sahel and the Ministry in charge of agriculture of Burkina Faso, with the support of FAO, G5 Sahel, UEMOA, the European Union, USAID and ECOWAS. The conference is a response to the urgency of the need for a coordinated response against the damage of the FAW, a transboundary insect pest that threatens food and nutrition security in Africa. The conference brought together 346 participants from 21 countries, including the 17 CILSS-UEMOA-ECOWAS countries, and Southern, Central and Eastern Africa. The participants came from Universities, National and International (IITA, ICIPE, CABI) Agricultural Research Institutions, National Plant Protection Services, Farmers' Organizations, subregional and regional organizations, Financial and Technical Partners, NGO and the private sector. The program of the conference included key notes sessions, presentations by the participating countries delegates, panels and a round table on resources mobilization strategies.

Member states of ECOWAS and CILSS are assisted by several partners in their efforts to control

the FAW, and most of the countries have prepared their national action plans and implemented their task forces. However, there is a need to train the different stakeholders (scientists, extension officers and farmers) in the management of FAW and to develop a capacity for the monitoring of the insect pest. Some research activities are in progress in the West Africa and Sahel sub-region : biology and ecology of FAW, relationships between FAW and its natural enemies, conservation biological control, biopesticides. The conference highlighted the importance of strengthening the collaboration between universities, research centers and extension services to accelerate the transfer of available technologies to farmers. It also insisted on the need to strengthen the capacities of the National Agricultural Research Systems in human, technical and financial resources.

At the policy level, the available levers for the management of FAW in the West Africa and Sahel region are the ECOWAS Agricultural Policy (ECOWAP), the UEMOA Agricultural Policy (PAU) and the Food Security Strategic Framework of CILSS.

Regarding resources mobilization, the following suggestions were made : (i) allocate part of the financial resources derived from taxes related to food imports to better structure the production systems of the Member States (ii) mutualize resources and actions of the stakeholders at sub-regional level (iii) provide operational and technical coordination (iv) operationalize the phytosanitary emergency fund.

The participants made some recommendations and delivered a 'Ouagadougou declaration' titled "*Let us mobilize to develop a coordinated regional response to the massive infestation of FAW, a real threat to food security*".

The closing ceremony of the conference was chaired by HE Mr. Roch Marc Christian Kaboré President of Burkina Faso and HE Mamadou Issoufou, President of the Republic of Niger.

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TURCICUM LEAF BLIGHT – AN EMERGING DISEASE OF MAIZE IN JAMMU AND KASHMIR

Turcicum Leaf Blight (TLB) has not been reported till date from the maize growing belt of Jammu and Kashmir. Roving surveys were conducted in the maize growing areas of Samba, Kathua and Jammu districts at different crop growth stages of maize. During earlier years 2017 and 2018, the disease incidence was low (10 – 15%). The farmers and department of Agriculture officials



confused it with nutritional deficiency and the disease went unnoticed and untreated. The fungus survives throughout the winter on infected maize residue on the soil surface and as the temperature rises during spring and early summer, sporulation occurs on the residue, and then the spores are splashed with rains or wind-blown onto leaves of the new maize crop. During 2019, the incidence was more severe (> 40%) at all the locations owing to the wet and humid weather that prevailed during the season. The disease symptoms (late stage symptoms, picture on the left) appeared primarily

on the leaves and at the later stage it was noticed on the cobs as well. The heavily infected fields presented a scorched appearance from a distance, causing leaf necrosis and premature death of the foliage, resulting in reduced fodder value and grain yield. This reduction in photosynthetic area at the milking or grain forming stage led to the formation of shriveled grains, thus reducing yield.

To check further spread of this disease and contain this fungus, following management strategies were recommended:

- Crop rotation for one- to two-year.
- Destruction of old maize residues by tillage.
- Planting resistant varieties.
- Timely planting. The late planted or early planted maize has been noticed to be more severely affected by this disease.
- Application of foliar fungicides such as carbendazim (0.1%), mancozeb (0.25%) at 10 days interval. As TLB sporulates rapidly, at least two sprays are must.

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The IAPPS Newsletter is published by the International Association for the Plant Protection Sciences and distributed in *Crop Protection* to members and other subscribers. *Crop Protection*, published by Elsevier, is the Official Journal of IAPPS.

IAPPS Mission: to provide a global forum for the purpose of identifying, evaluating, integrating, and promoting plant protection concepts, technologies, and policies that are economically, environmentally, and socially acceptable.

It seeks to provide a global umbrella for the plant protection sciences to facilitate and promote the application of the Integrated Pest Management (IPM) approach to the world's crop and forest ecosystems.

Membership Information: IAPPS has four classes of membership (individual, affiliate, associate, and corporate) which are described in the IAPPS Web Site www.plantprotection.org.

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