

4th International Cereal Nematodes Initiative Workshop

Venue: Friendship Hotel Grand, Beijing (<http://www.bjfriendshiphotel.com>)

Date: 22-24 August 2013

Organizers:

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ICNI and its Objectives: The International Cereal Nematode Initiative (ICNI) was founded in 2006. It aims to create a critical mass of scientific capacity and skills to deliver sustainable solutions by working at both the practical and theoretical level.

Cereal Nematode (CN) *Heterodera* spp. and *Pratylenchus* spp. are acknowledged as a global economic problem on wheat production systems, both in many regions of the developed and developing countries. Within the framework of the ICWIP (ICARDA CIMMYT Wheat Improvement Program) which relates to wheat improvement research in Central Asia, West Asia and North Africa, CIMMYT and the Turkish Ministry of Agriculture in collaboration with our National Program partners from developing countries and several Advanced Research Institutions in Australia and Europe have undertaken research over the last 12 years to:

- 1. Understand the importance and distribution of the Nematode (CN)**, which is widespread throughout West Asia, North Africa, parts of Central Asia, Northern India and China in their wheat production systems.
- 2. Investigate potential control options with a major emphasis on host resistance**-validation and integration of resistant sources (traditional and molecular) into wheat germplasm for global wheat production systems (particularly focused on rainfed or supplementary irrigation systems). Rotation has been partially explored.
- 3. Provide training for scientists from developing countries**

The 3rd ICCNI workshop was held during 22-23 September in Adana, Turkey. The workshop attracted 70 participants from 20 countries with 38 presentations on the status of the pest, integrated control methods and host plant resistance. The 1st ICCNI was held in Antalya, Turkey and Proceedings can be downloaded from the following website: <http://www.spipm.cgiar.org/reports>. Those workshops were very successful on providing the global status of the problem of CCN and forming networks and partnerships to continue working on this problem.

Workshop Topics:

1. Global status of the distribution of CN
2. The economic importance and population dynamics of CN on wheat
3. Control strategies of CN in wheat using host resistance
4. Control strategies of CN other than host resistance
5. Use of molecular tools for research with CN (such as pathogen diagnostics, phylogeny studies and host resistance).
6. CN genome and parasitism genes
7. Biological control and IPM

Registration and Abstract Submission:

Registration and abstract submission of this workshop are bundled with the 10th ICPP registration system.

Early bird registration before Feb. 15, 2013: RMB 1,600 (1 US \$=6.5 RMB)

Onsite registration: RMB 2,100

Official published proceedings will be made from this workshop. If you would like to contribute to the workshop please kindly submit your abstract of no more than 250 words via 10th ICPP web and also email to Dr. Deliang Peng (dlpeng@caas.net.cn) and Dr Amer Dababat (a.dababat@cgiar.org) and the scientific committee for the workshop will review applications and inform contributors of acceptance as poster/paper by 1 June 2013. Contributors with accepted papers will be asked to prepare a 2-4 page paper by June 16, 2013. Please follow the format provided below.

Accommodation: Hotel costs are RMB 490/single room at **Friendship Hotel Grand**. The hotel is located 40 minutes away from airport by car and can be reached with Shuttle Bus for about 16 RMB. Please contact workshop organizer Deliang Peng at dlpeng@caas.net.cn; phone +86 10 62815611; fax +86 10 62896114 for hotel reservations.

Programme:

22nd August: whole day, registration

23rd-24th August: scientific programme

Organizing Committee:

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For more information and to indicate your intention to participate, please contact the workshop organizers by email (Dr. Deliang Peng, dlpeng@caas.net.cn; Dr Amer A Dababat, a.dababat@cgiar.org)

Oral Presentation

Preferred Session: Control strategies of CN in wheat using host resistance

Screening of Winter/Facultative Wheat Germplasm against the Cereal Cyst Nematode *Heterodera filipjevi* in Turkey

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Summary - Cereal Cyst Nematode is considered one of the major plant parasitic nematodes affecting cereal production worldwide and causes huge damage and losses. The most reported pathogenic species are *Heterodera avenae*, *H. filipjevi* and *H. latipons*, each having different pathotypes. At least 12 pathotypes have been described for *H. avenae*. Several control options are used to protect against CCN damage, however, one of the most cost effective, environmentally friendly and easily adopted control measures is the use of genetic host resistance which will maintain nematode populations below economic threshold for damage. Many sources of resistance against cereal cyst nematodes (CCN) have known identified but their effectiveness and usability is dependent on the reaction of the specific species and pathotype which in different regions. CIMMYT in collaboration with partners in Turkey, have screened about 3000 wheat entries against *Heterodera filipjevi* and *H. avenae* under controlled conditions. Up to day, more than 100 genotypes with resistance to CCN (groups 1 and 2 out of five based on number of cysts per plant root) have been identified. The resistant germplasm represents a broad geographical spectrum of breeding lines and varieties from Turkey, Europe, Central Asia and IWWIP program. The best resistant germplasm is being tested in the field under high and low nematode pressure to evaluate their yield performance and tolerance to CCN. The current research aims to identify possible molecular markers for resistance to CCNs through association mapping. A set of 278 lines with variable levels of resistance to CCN has been selected for this study.

Keywords: *Heterodera filipjevi*, IWWIP, Resistance, Screening, Tolerance, Wheat