National Symposium
Climate Change, Plant Protection and Food Security Interface

17-19, December, 2009

Collaborator: West Bengal Pollution Control Board

ABSTRACT

Editors:
M. R. Khan
Shantanu Jha
Asit K. Mukhopadhyay
Chitreshwar Sen

Organised by
Association for Advancement in Plant Protection
Plant Health Clinic
Directorate of Research
Bidhan Chandra Krishi Viswavidyalaya
Kalyani, 741235, Nadia, W.Bengal, India
E-mail: aapp_bckv@yahoo.co.in
From the Editor’s Desk:

The overwhelming response of the plant protection fraternity in the first National Symposium organized by us in 2007 on ‘Plant Protection-Technology Interface’ encouraged us to go for another similar interactive platform – ‘Climate Change, Crop Protection and Food Security Interface’.

The issue that is shaking the World today is climate change or global warming that is impacted with all life forms on earth. As the Symposium goes on, the Copenhagen Summit on Climate Change will be taking major decisions regarding GHG emissions.

Given that predicted climate change will lead to a pole ward migration of crops, the cropping profile in any given geographical region is likely to change. Pest profile on such crops also most certainly will change, bringing in new challenges for their protection. On the otherhand, environmental concerns are at loggerheads with the present day over emphasis on the use of pesticides in agricultural pest management. The alternative of organic agriculture is being pushed aggressively to counter the use of pesticides and high dosage of fertilizers. Already the global food security is in doldrums. Will such organic culture on a large scale lead to sufficient produce output to meet the challenges of global food security? Even though food security issues are largely impacted with many social and economic issues other than productivity, the minimal productivity needs to be assured for a population burgeoning as a function of time. How do we go about it?

Since there is a significant amount of crop losses resulting from pest onslaught that are likely to be aggravated by a shift in regional biodiversity resulting from climate change, obviously plant protection strategies need to be revised to meet the new challenges posed by both climate change and food security issues.

The Symposium, divided into seven technical sessions and a plenary, will deliberate on various aspects related to plant protection that may need revised attention given its interface with the looming climate change and food security issues. The serendipitous availability of Scientists of the APN group (Asia-Pacific Network) along with a team of scientists from neighbouring Bangladesh for participation in this Symposium will most certainly enrich and enliven the deliberations.

We received a large number of papers – many of them befitting oral presentation – but only marginally related to the main theme of the Symposium. Many of them have been placed under the poster session. Nevertheless, these papers are important as they throw light on ways and means of pest management strategies. These are divided into two broad groups. Each poster will be rated and the best ones will be suitably provided with special citation at the end of the Plenary Session.

Compiling the huge number of Abstracts received till as late as December 10, 2009 was a daunting task given the mosaic of formatting styles in which they were forwarded. Any errors of omission or commission are ours. The printing and the production of the ‘Book of Abstracts’ is made largely possible through funds provided by NABARD which we thankfully acknowledge.

M. R. Khan
Shantanu Jha
Asit K. Mukhopadhyay
Chitreshwar Sen
The First Members of the Governing Body of AAPP

1. Prof. D. K. Bagchi, Vice-Chancellor (Retd.), BCKV : President
2. Prof. C. Sen, Professor (Retd.), Fg./Ag, BCKV : Vice president
   Prof. N. Mukherjee, Professor (Retd.), Fg./Ag, BCKV : Vice president
   Prof. M. R. Ghosh, Professor (Retd.), Fg./Ag, BCKV : Vice president
   Prof. Asit K. Mukhopadhyay, Professor (Retd.), Fg./Ag, BCKV : Vice president
   Prof. S. K. Sanyal, Director of Research, BCKV : Vice president
   Prof. M. M. Adhikary, Dean, Faculty of Agriculture, BCKV : Vice president
3. Prof. Shantanu Jha : Secretary
4. Prof. P. S. Nath : Assistant Secretary
   Prof. S. Das : Assistant Secretary
   Dr. B. Bandyopadhyay : Assistant Secretary
   Dr. M. R. Khan : Assistant Secretary
   Dr. S. Dutta : Assistant Secretary
5. Dr. S. K. Ray : Treasurer
6. Prof. A. K. Somchoudhury : Member
   Mr. P. K. Ghosh : Member
   Prof. R. K. Ghosh : Member
   Prof. K. Baral : Member
   Prof. Md. Abu Hasan : Member
   Dr. B. K. Dutta : Member
   Dr. K. K. Goswami : Member
   Dr. A. K. Sahoo : Member
National Symposium on
CLIMATE CHANGE, PLANT PROTECTION AND FOOD SECURITY INTERFACE

LOCAL ORGANIZING COMMITTEE

Chairman : Professor Dipak Kumar Bagchi
Working Chairman : Professor Chitreswar Sen
Organizing Secretary: Professor Shantanu Jha
Convenor : Dr. Matiyar Rahaman Khan

Members :
Dr. A. Sarkar, Director of Extension Education (Actg.), BCKV
Prof. L. M. Mondal, Dean, Faculty of Agriculture, BCKV
Prof. S. N. Ghosh, Dean, Faculty of Horticulture, BCKV
Prof. J. P. Gupta, Dean, Faculty of Ag. Engineering, BCKV
Prof. S. K. Mitra, Dean, Post Graduate Studies, BCKV
Prof. P. K. Pal, Head, Dept. of Entomology, F/Ag., BCKV
Prof. S. Das, Head, Dept. of Plant Pathology, F/Ag., BCKV
Prof. A. Zaman, Head, Dept. of Agronomy, F/Ag., BCKV
Prof. P.K. Chakraborty, Head, Dept. Agrometeorology, F/Ag., BCKV
Dr. R. K. Kole, Head, Dept. of Agricultural Chemicals, F/Ag., BCKV
Dr. P. Pramanik, Director, Dept. of Horticulture, GoWB
Dr. A.K. Hui, Jr. Director, Plant Protection and Quality Control, GoWB

Executive Members
Prof. M.R. Ghosh
Prof. N. Mukherjee
Prof. A.K. Mukhopadhyay
Prof. S.K. Sanyal
Prof. M.M. Adhikari
Prof. A. K. Somchoudhury
Mr. Prabir K. Ghosh
Prof. P.S. Nath
Prof. S. Das
Prof. R. K. Ghosh
Prof. Md. A. Hasan
Prof. K. Baral
Dr. S.K. Ray
Dr. B. Bandopadhyay
Dr. S. Dutta
Dr. B. K. Dutta
Dr. K.K. Goswami
Dr. A K Sahoo
Sub-Committees

TECHNICAL SUB-COMMITTEE
Chairman: Prof. C. Sen
Jt. Convenor: Prof. P.S. Nath
Dr. S. Dutta

MEMBERS
Prof. N. Muhkerjee,
Prof. M.R. Ghosh
Prof. Asit. K. Mukhopadhyay
Mr. P. P. Ghosh
Prof. R.K. Ghosh
Prof. Abu Hasan
Dr. M. R. Khan

Dr. Prasanta Bandopadhyay
Mr. Sankar Dhar

RECEPTION, REGISTRATION & ACCOMODATION FOOD SUB-COMMITTEE
Chairman: Prof. B. Bandyopadhyay
Jt. Convenor: Prof. Abu Hasan
Dr. A.K. Sahoo

MEMBERS
Prof. Md. Mohasin
Dr. Subhasis Mondal
Dr. Chamkak Kundu
Dr. Sunil Gunri
Dr. (Mrs.) Suchitra Mondal
Dr. (Mrs.) Ivy Chakraborty
Mrs. Malabika Debnath
Mr. P.P. Ghosh
Mr. Ashis Roy
Mr. Benupada Maity

PROGRAMME SUB-COMMITTEE
Chairman: Prof. N. Muhkerjee
Convenor: Dr. M. R. Khan

MEMBERS
Prof. S. Acharya
Prof. S. Das
Dr. Pintoo Bandyopadhyay
Dr. Kallol Bhattacharya
Dr. (Mrs.) Surhita Chakraborty
Dr. S. Islam
Dr. Amit Sarangi
Dr. Manas K Pandit
Mr. Kailash Dhar
Mr. Sankar Dhar

Dr. S. Islam
Dr. Amit Sarangi
Dr. Manas K Pandit
Mr. Kailash Dhar
Mr. Sankar Dhar

TRANSPORTATION SUB-COMMITTEE
Chairman: Dr. Krishna Goswami
Jt. Convenor: Dr. Susanta Sarkar
Dr. B.K. Das

MEMBERS
Mr. Pranab Barma
Mr. Manoj Kumar
Mr. Biswarup Sarul
Mr. Biswajit Mahato
Mr. Tamagna Saha
Mr. Diptanjan Ghosh
Mr. Sumanta Bhattacharya
Mr. Satayjit Hembram
Mr. Sanjay Mahato
Mr. Gunjan Tahapa

CULTURAL PROGRAMME SUB-COMMITTEE
Chairman: Prof. M. M. Adhikari
Convenor: Prof. S. Acharya

Member
Dr. Manas K. Pandit
## National Symposium on CLIMATE CHANGE, PLANT PROTECTION AND FOOD SECURITY INTERFACE

### FINANCE & PURCHASE SUB-COMMITTEE
- **Chairman:** Prof. S. Jha
- **Convenor:** Dr. S.K. Ray
- **Members:**
  - Prof. P.S. Nath
  - Prof. Srikanta Das
  - Dr. Arup K. Chattopadhyay

### POSTER PRESENTATION SUB-COMMITTEE
- **Chairman:** Prof. M.M. Adhikari
- **Convenor:** Dr. Krishna Goswami
- **Members:**
  - Prof. Abu Hasan
  - Dr. B. N. Panja
  - Dr. Amitava Biswas

### PUBLICATION/EDITORIAL SUB-COMMITTEE
- **Chairman:** Prof. C. Sen
- **Jt. Convenor:** Dr. M. R. Khan
- **Members:**
  - Prof. N. Mukherjee
  - Prof. M. R. Ghosh
  - Mr. P. P. Ghosh
  - Mr. S.P. Kuiry

### FOOD SUB-COMMITTEE
- **Chairman:** Prof. Satyen S. Maity
- **Jt. Convenor:** Dr. Subhas Kole
- **Members:**
  - Dr. B.K. De
  - Dr. Dilip K. Mishra
  - Dr. Champak Kundu
  - Dr. Krishna Goswami
  - Dr. Subhra Muherjee
  - Dr. Rajib Nath
National Symposium on CLIMATE CHANGE, PLANT PROTECTION AND FOOD SECURITY INTERFACE

The cottony cushion scale, *Icerya purchasi* Mask. (Homoptera: Margarodidae) is a soft-bodied mealybug infesting guava leaves all over Bangladesh. It is reddish-brown and lays up to 600-700 eggs during her lifetime. The life cycle is completed within 46-240 days depending on different environmental conditions. The females develop by parthenogenesis. It is a sucking pest and mainly feeds on citrus. Its secondary hosts include fig, apple, almond, guava etc. Due to severe infestation, premature falling of leaves occurs. The ber or plum scale, *Aonidia ziziphi* Rah. was recorded from Rajshahi, Bangladesh as a serious pest of ber plant damaging the leaves and immature fruits during December- January, 2007. Due to severe attack of mealybug, the pericarp of immature fruit is damaged to some extent and it becomes unfit for human consumption and market value is reduced.

**PP - 51: Seasonal activity of spotted beetle, *Epilachna vigintioctopunctata* infesting ashwagandha (*Withania somnifera*) and its relation to weather factors**

L. Saravanan and Vipin Chaudhary, Directorate of Medicinal and Aromatic Plants Research, Boravi, Anand-387 310, Gujarat, India, E-mail: laxmansaravan@rediffmail.com.

The spotted beetle, *Epilachna vigintioctopunctata* (Coleoptera:Coccinellidae) has been observed as a major foliage feeding pest on ashwagandha (*Withania somnifera*), an important medicinal cash crops grown in Madhya Pradesh, Rajasthan, Gujarat and Maharashtra in late kharif season. It was observed that there were changes in the occurrence and abundance of this pest from season to season. Hence an attempt was made to study the seasonal activity of this pest in relation to weather factors prevailing in this region. Ashwagandha variety JA134 was sown at the DMAPR Farm during August 2008. A total of 20 plants were taken randomly and total number of eggs, grubs, pupa and adults of spotted beetle per plant were counted at weekly intervals. The activity of adults and grubs were maximum on JA134 during October, 2008 with its peak (1.95 adults, 16 eggs and 5.75 grubs/plant) during the second week (41st standard week). Thereafter the population gradually decreased. The weather conditions prevailed during the peak period was an average maximum temperature of 35.8°C, minimum temperature of 18.9°C and relative humidity of 54%. Though adults activity was observed up to first fortnight of December 2008 but their population remained low. The pest activity was not observed after 2nd week of December, 2008 when the average maximum and minimum temperature had fallen to 28.2°C and 16.9°C respectively. It was found that atmospheric temperature (maximum and minimum) had significant positive correlation with the population of adults, grubs and number of eggs.