National Symposium
Climate Change, Plant Protection and Food Security Interface

17-19, December, 2009

Collaborator: **West Bengal Pollution Control Board**

ABSTRACT

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Organised by

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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.

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found free from pod borer infestation. Genotype ICPL-87060 was found to be least susceptible to major 3 insects pest species viz. pod fly, plume moth and pod bug respectively. Further genotypes JKT-240 and JKM-8 were found to be least susceptible against insect pest's viz. plume moth, pod bug and pod borer respectively. In addition they were least damage due to physiological disorder.

PP - 60: Influence of weather factors on the population of *Coccinella septumpunctata* L. in cotton

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The lady bird beetles, *Coccinella septumpunctata* L. (Coleoptera:Coccinellideae) is the most potential and effective predator of cotton pest. The grub and adult stages of *C. septumpunctata* feed voraciously on cotton pest i.e. aphids, jassid and white fly. The period and intensity of activity of this predator mainly depends on the prey density, plant protection practices and environmental factors. Of these the climatic factors such as temperature, relative humidity, sunshine hours, wind velocity and rainfall influenced the predator population greatly.
In view of that a investigation to assess influence of climatic factors such as temperature, relative humidity, sunshine hours, wind velocity and rainfall on the population of *Coccinella Septumpunctata* L. was conducted at the J.N. Krishi Vishwa Vidhyalaya, Cotton Research Station, Khandwa M.P. during 2004-05 & 2005-06. The hirsutam genotype JK-4 was sown on 29th June and 25th June during 2004 and 2005 respectively at a spacing of 60X60 cm. Normal agronomic practices recommended for the region were followed for raising the crop. No plant protection measure was taken throughout the crop season. The Regular observations on the population dynamics of *C. septumpunctata* and climatic factors were recorded. The influence of different meteorological parameters on population and infestation of pests were studied by graphical superimposition technique. All the possible Correlations, multiple regression and path analysis were worked out. The perusal of the data revealed that *C. septumpunctata* was first observed during the 27th SMW i.e. first week of July and remained active till 50th SMW (IInd week of December).The peak population was observed (9.76/5 plant) during 37th SMW i.e. 3rd week of September. The weather condition prevailed during this week viz. maximum temperature, minimum temperature, morning relative humidity, evening relative humidity, sunshine hours, wind velocity, rainfall and rainy day were 34.07°C, 26.31°C, 83.54 %, 60.56%, 6.39 hours per day, 6.00 kmph, 53.50 mm and 3 days respectively. The simple correlation studies revealed that the LBB population had a significant positive correlation with maximum temperature (0.542) and minimum temperature (0.560). The multiple coefficient value indicated that 79.50% change in LBB population were affected by maximum temperature, minimum temperature, morning relative humidity, evening relative humidity, sunshine hours, wind velocity, rainfall and rainy days. The path coefficient analysis revealed that minimum temperature had positive and high direct effect (1.6592) followed by morning relative humidity (0.1972), rainfall (0.1535), and sunshine hours (0.1519) and evening relative humidity (0.016), respectively.