

AICCIP ANNUAL GROUP MEETING: 2011-12 ANGRAU, Hyderabad

Proceedings of the Combined Plant Protection Session 09:04:2012

The combined session of plant protection was chaired by Dr T.P.Rajenderan , Assistant Director General(Plant Protection) Indian Council of Agricultural Research,New Delhi . The session was Co-chaired by Dr.T.Rameshababu, Head Department of Entomology, College of Agriculture,Rajendernagar; Dr D.Raja Ram Reddy Ex-Dean of Student Affairs ANGRAU, Hyderabad and convened by Dr Dilip Monga PI (Plant Pathology) and Dr S.Mohan PI (Entomology) . Dr Rishi Kumar, Sr Scientist (Entomology), CICR,Regional Station, Sirsa and Dr B.Sreelakshmi , Lam Guntur were the repporteurs of the session .The session was attended by the entire AICCIP scientist from Entomology and Plant Pathology. The representatives of Pesticides and seeds industry also attended the session.

Dr S.J.Rehman, Professor ,AICRP on Biological Control, Rajendernagar welcomed the chairman, co-chairman, convenors and all present during the session . Dr Rajenderan at the outset emphasized the need of research in **cotton health management through AICCIP**. He advised to study the effect of modern molecule on the upsurge in cotton physiology in the form of effects on non target organisms and resurgence in the population of secondary pests. Dose related bioefficacy response of pesticides as per the label claim and the prevalent dose may be undertaken in AICCIP which will enable to revalidate the doses of pesticides.

According to him all scientists should compare the existing plant protection package of practices of their respective university with the **good agriculture practices finalized by AICCIP** and suggest to higher authorities for inclusion of the recommendation arising out of this work.

Whenever new molecules are being evaluated , the data on **post harvest effect** on the byproduct like edible oil/cake etc should also be generated with the help of **AICRP on residues** in progress at SAU,s. The effects of pesticides sprays on other crop also need to be studied.

Similarly **operational research program** is another area, where analysis of response of varieties to agriculture practices like insect/pests/weed management etc should be studied.

In Seed dressing there is need to finalize the appropriate doses of pesticides used for **seed dressing** . Any recommendation of liquid/EC formulation as seed treatment should come with the methodology. Dr Monga also highlighted information regarding the compatibility of fungicides with the bioagents used as seed dressing and stressed the need for detailed study on this aspect. **Surveillance for major pests /new pests is to be strengthened for E-Pest surveillance.**

Mohan in agreement with ADG (PP) informed that necessary changes as per the advice will be incorporated in technical program to be formulated.

Dr Monga also agreed to the idea of ADG (PP) regarding validation of label claim through its comparison to the recommended doses. He also emphasized the need of starting from Deemed to be registered pesticides to the established one. For studying the susceptibility pattern of hybrids he suggested that this exercise can be taken up on payment basis from private seed companies. According to him the idea of conducting ORPs where studying the efficacy and effect of insecticides/fungicides/herbicides together is a good idea. In HDPS recording of observation on all biotic and abiotic stress is also very useful.

The session ended with a vote of thanks .

Proceedings of Concurrent Session Entomology for formulation of technical program on 10.04.2011

The Entomology session was chaired by Dr T.Ratna Sudhakar, University Head, Department of Entomology, ANGRAU. Dr T.Ramesh Babu, Head College of Agriculture, Rajendernagar, Dr T.V.K.Singh, Professor, Department of Entomology, College of Agriculture, Rajendernagar were the Co-Chairman. Dr Rishi Kumar, Sr Scientist (Entomology), CICR, RS, Sirsa and Dr N.V.V.S.Durga Prasad, Entomologist, Lam Farm (Guntur) were the rapporteurs of the session. Dr S.Mohan, Principal Investigator (Entomology), AICCIP along with the Entomologist from AICCIP Group and representatives of Private companies were present.

In his opening remarks chairman described cotton a very sensible crop which not only called as 'whitegold ' but also attract credits for the farmers. He stressed upon the formulation of technical program as per the regional needs. Dr R.Babu, again emphasized the need of revalidation trials where obsolete agriculture practices can be replaced with the good agriculture practices. Dr T.V.K.Singh advised for conducting population dynamics study of major insect-pests of cotton. While elaborating his plan for a new technical plan for 2012-13 Dr S.Mohan appraised the house about the suggestion given by ADG (PP). According to him the screening trial will be restricted to zonal entries so that some good material can be obtained through this which can be further forwarded to advance screening and promising entries can finally get their way to the gene bank. After the detailed discussion the following technical program was formulated.

Ent 1a. Screening of breeding material for resistance to insect pests (Zonal Trials Only): All centres

The screening of all the breeding materials of the respective centre should be carried out under unprotected condition as per the established standard protocol of AICCIP.

- Include **check entries without seed treatment** as that of coded entries
- Find out resistant/tolerant entries (reference to varieties)
- Shortlist resistant/tolerant entries

- Collect seeds for advanced screening trial

Check entries for the different zones.

North zone: RS2013 (resistant to jassid & whitefly); GA (susceptible) MRC6304 Bt (bollworm resistant); HS6 (bollworm susceptible)
(Action: Dr.C.J.Kapoor, Sri Ganganagar, to provide seeds to all concerned)

Central zone: DHY286 (jassid resistant); DCH32 (susceptible) Bunny Bt (bollworm resistant); RCH 2 NBt (bollworm susceptible)
(Action: Seeds supply – Sr Cotton breeders of their respective centres)

South zone: Bunny (Jassid tolerant); DCH32 (susceptible) Bunny Bt (bollworm resistant); DCH 32 (bollworm susceptible)
(Action: Dr. S.B. Patil, Dharwad to provide seeds to all concerned)

Ent 1b. Advanced screening of promising entries:

From the preliminary screening (Br03/Br04) , shortlist few entries which show high level of resistance to insect. At harvest the Entomologist have to collect seed on their own from these shortlisted entries for sowing in 6 rows in 3 replications (large scale testing) during second year. Simultaneous caged studies (artificial conditions) + basic studies on resistance (Leaf anatomy & Biochemical) should be conducted. During this process Entomologist should consider the performance of selected entries with reference to yield .Finally select **one /two best entries and send it for confirmation to CICR,Nagpur and finally to Gene bank.**

The centres and the respective pests are:

Pests	North Zone	Central Zone	South Zone
Leafhopper	PAU,ludhiana	Khandwa, Surat, Nanded, Banswara	Lam, Coimbatore, Dharwad, Raichur
Thrips	Faridkot	Rahuri	Dharwad
Whitefly	Faridkot, Sirsa	-	-
Spotted bollworm	Faridkot	Akola	Dharwad
Pink bollworm	Faridkot	Akola, Surat, Junagarh,rahuri	Dharwad, Lam
Stem weevil			Srivilliputtur
Miridbug	-	-	Coimbatore, dharwad, Raichur, Dharwad
Shoot Weevil			Dharwad

Ent 2. Population dynamics to develop suitable forecasting model:

Data should be taken for both sucking pests and bollworms from Ganganagar Ageti and HS-6, respectively for North India and DCH32 (untreated) for Central and South India.

S. No	State	Variety/Hybrid/Bt hybrid			Centres
		Sucking pest	Bollworm		
1	Rajasthan	Ganganagar Ageti	HS6	RCH-134BG-II--	Sri Ganganagar
2	Punjab	Ganganagar Ageti	HS6	RCH-134BG-II--	Faridkot, Ludhiana
3	Haryana	Ganganagar Ageti	HS6	RCH-134BG-II--	Hisar
4	Gujrat	DCH32	DCH32*	RCH-2BG-II	Surat (I), Junagarh, Bharuch
5	MP	DCH32	DCH32*	RCH-2 BG-II	Khandwa
6	Maharashtra	DCH32	DCH32*	RCH-2BG-II	Nanded, Akola, Rahuri
7	Karnataka	DCH32	DCH32*	RCH-2BG-II	Dharwad, Raichur
8	AP	DCH32	DCH32*	RCH-2BG-II	Guntur, Nandyal, Raichur
9	Tamil Nadu	DCH32	DCH32*	RCH-2BG-II	Coimbatore, srivilliputhur

- Any unusual survival and higher levels of infestation must be notified to Dr Mohan and Dr Kranthi immediately by mail and phone. The surviving Bollworms (*Helicoverpa armigera* and *Pectinophora gossypiella*) larvae both from Bt and conventional cotton will be brought to the laboratory. From North Zone the larvae shall be sent to Dr Rishi, Sirsa, Central Zone to Dr Sandhya Kranthi, Nagpur and for South Zone to Dr B. Dharajothi for carrying out resistance monitoring bioassays.
- Dr. C.J.Kapoor will supply the seed of Ganganagar Ageti to all the concerned centres. Dr. K.K. Dahiya, Professor, Entomology, HAU, HISAR will arrange for the seed of HS-6. Dr. S.B. Patil, Dharwad will supply the untreated seed of DCH32 to the entire concerned centres directly. The mentioned BG-II hybrid can be obtained directly from the market.
- At least 2000 Sq. meter plot has to be sown for population dynamic study. Divide the plot into 4 half each (both under protected and unprotected condition). In North Zone, division of area will be according to the varieties/hybrids sown. Keep one half untreated (for sucking pests) and apply required sprays of neonicotinoid (imidacloprid/ acetamiprid/ thiamethoxam/ clothiadinin) in the another half as per requirement to keep the population of jassid under control so that the observations for the bollworm can be taken.

- **Observations to be recorded:**

Weekly observations for aphid, jassid, whitefly, thrips (3 leaves/plant), mealy bug, ABW, SBW, PBW & Natural enemies after one **month of sowing**(Natural enemies species wise to be recorded).

Besides the above fixed plot survey, **roving survey** at farmer's field with at least 5 observations during peak period of activity of the sucking pests and at harvest (for PBW) should be made as per the proforma mentioned below.

S.N.	Date of Visit	Name of Hybrid	Insect species and incidence (population/percentage)	Insecticide Used	Dose given/label Claim dose
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Ent 3a: Evaluation of IGR, insecticides and fungicides mixture against major pests and diseases of cotton

Target pests: Sucking pests and Bollworms.

Target diseases: Alternaria leaf spot, Myrothecium leaf spot and Grey mildew

Treatment No.	Chemical	Dose g. a.i./ha
1	Sulfoxaflor24% SC	75
2	Sulfoxaflor24% SC	90
3	Flupyradifurone 20SL	200
4	Flupyradifurone 20SL	250
5	Imidacloprid 200SL(Standard Check)	40
6	Acephate 75SP	562.5
7	Untreated control	

Centres: 9

North zone:

Central zone:

South zone:

Replications: 3

Sriganganagar, Faridkot

Akola, Junagarh, Surat, Khandwa

Dharwad, Lam (Guntur), Srivilliputtur

Observations – Record observations pre-treatment and 7 days after spray. Record natural enemies (predator/parasitoids) population individually pre and 7 day after application of treatment). Ganganagar Ageti for North Zone (spray initiation at 60 to 75 DAS followed by 2-3 subsequent sprays if required and 4-6 sprays for bollworms. RCH-2 non-Bt hybrid for South & Central Zone (spray initiation after 30-35,45-50,60-65 DAS for sucking pests and 4-6 sprays for bollworms)

Precaution: The drifting of insecticides while spraying may strictly be avoided.

* For ClCuV early intervention (45-50 DAS) spray can be given at Faridkot and Sriganganagar centre, if required and data on whitefly incidence will be recorded.

Ent 5. Survey of 5 fixed farmers field location to find out the actual field entomological interventions with reference to Bt cotton(BG-II)(all centre) .

Field observations to be supplemented with laboratory observations.

Ent 3b. Revalidation of existing recommendation of insecticides against sucking pests in cotton ecosystem. (All centres)

This experiment is proposed to test if the existing recommended doses of popular insecticides in cotton ecosystem are in accordance with label claim.

Treatments: 10

Replications: 3

S. N.	Treatment	University Recommended Dose (g. a.i./ha)
1	Acephate 75 SP	
2	Acetamiprid	
3	Buprofezin (IGR) 25% SC	
4	Imidacloprod 200SL	
5	Thiamethoxam 25WG	
6	Fipronil	
7	Difenthiuron	
8	Control	

All Centres

Hybrid: Popular Bt cotton hybrid of the region.RCH-134BG-II for North and RCH2BG-II for south and central zone.

Observations: Record the incidence of all the sucking pests and their natural enemies (predators and parasites) before and one week after application of insecticides which will be done at the moderate level of incidence noticed. The natural enemies population will be recorded individually.

LIST OF SCIENTISTS AND PRIVATE COMPANY REPRESENTATIVE ATTENDED ENTOMOLOGY SESSION 2011-12

1. Dr. Ratna Sudhakar, University Head, Dept. of Entomology, ANGRAU, Hyderabad
2. Dr. S. Mohan, Principal Investigator,AICCIP
3. Dr. Dr.T.Ramesh Babu,Head, Dept.of Entomology,College of Agriculture,Rajendranagar
4. Dr. Dr.T.V.K.Singh,Professor,Dept.of Entomology,College of Agriculture,Rajendranagar

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