

Minutes of the 9th Meeting of the Standing Committee to review applications for commercial release of Bt cotton hybrids expressing approved events under 'Event based approval mechanism (EBAM)' held in DBT, New Delhi on 13th April, 2012

The 9th meeting of the Standing Committee to review applications for commercial release of Bt cotton hybrids expressing approved events under 'Event based approval mechanism (EBAM)' was held on 13th April, 2012 in Room No. 816, Department of Biotechnology, New Delhi under the Chairmanship of Dr. N. Gopalakrishnan, ADG (Commercial Crops), ICAR, New Delhi. The list of participants was as under:

A. Members

Dr. Dilip Monga, Head, CICR Regional Station, Sirsa, Haryana
Dr. Punit Mohan, Principal Scientist, CICR, Nagpur
Dr. Shruti Rai Bhardwaj, Deputy Director, M/o Environment & Forests, New Delhi
Dr. K.K.Tripathi, Member Secretary, RCGM & Scientist-G, DBT
Mrs. Rajalakshmi Muralidharan, Member Secretary, Standing Committee & Scientist-D, DBT

B. Special Invitees

Dr. Nitin Kumar Jain, Scientist-D, DBT
Dr. Amit Parikh, Scientist-C, DBT

Welcome Remarks by the Chairman

Dr. N. Gopalakrishnan, Chairman, Standing Committee extended a formal welcome to all members of Standing Committee for the 9th meeting and initiated the process of the meeting.

Action taken report by the Member- Secretary

Member Secretary informed in brief about the action taken on the minutes of the previous meeting of the Standing Committee held on 14.02.2012. It was also informed that necessary follow up action was taken on the recommendations of the Standing Committee in its 8th meeting and recommendation letters were issued to State Agriculture Departments/applicants under intimation to the GEAC.

Remarks/Views by the Members

The Chairman observed that with the induction of GEAC representative in the Standing Committee, DBT-MoEF-ICAR are jointly involved in the review of applications for commercial release of Bt cotton hybrids of approved events and this gives strength to the Committee in taking appropriate decisions. The members raised the issue of huge number of applications being submitted by the applicants and also the same company submitting multiple numbers of applications. The members were also of the view that since a large number of hybrids have already been recommended for release, the farmers are confused and misguided as they are not getting adequate information on hybrids with better yield and other beneficial characteristics. The committee stressed the need for restricting the number of applications and number of hybrids recommended per seed

company for commercialization based on strict criteria such as agronomic parameters, yield, pest and disease resistance and better adaptability with desirable fibre quality attributes. The Committee reiterated its request to GEAC to develop a mechanism through the Sub-Committee constituted by GEAC to filter out/withdrawal of permission of non-performing hybrids and to make sure that the farmers get best performing hybrids for cultivation.

It was noted that bollworm complex damage is a serious problem in Rajasthan. Since the applicants have submitted nearly similar DUS descriptors for different hybrids, it was suggested that submission of DNA fingerprinting details of the proposed Bt cotton hybrids should also be a part of the TOR. It was mentioned that estimation of gossypol content can also be included. It was further suggested that monitoring teams can be constituted which should conduct site inspection to verify the claims of the applicants. The members also raised the issue of using low yielding Bt cotton hybrids as checks, and opined that best performing hybrids should be used as checks for comparison in SAU trials. The Committee suggested that Sub-Committee of GEAC should look into this issue and recommend standard checks zone wise for usage in SAU trials. The considered opinion of crop experts from CICR / AICRP on cotton besides other stakeholders for a comprehensive evaluation procedure is suggested so that cotton farmers stand to gain through better productivity by way of cultivating high yielding hybrids.

It was suggested that the various recommendations made by the Standing Committee in earlier meetings and in the IXth meeting for inclusion in Terms of Reference (TOR) may be consolidated and the compiled list may be communicated to Member Secretary, GEAC for expediting the matter with the Sub-Committee of GEAC. Accordingly, the Committee listed the following recommendations for inclusion in the revised TOR:

1. Performance trial report including pest and disease reaction for the proposed Bt cotton hybrids, at least for one year, for both rainfed and irrigated situations as evidenced by at least one SAU trial / AICCIP (ICAR) trial from respective SAU centre from each State for that particular state (rainfed/irrigated situation as applicable). SAU/ ICAR-AICCP trial reports should include data on yield (with CD and CV), irrigated/ rainfed, and pest & disease reactions. The yield, agronomic parameters, pest disease comparison, fibre quality attributes and spinning potential [supported by CIRCOT (ICAR) data] should be done with best performing checks in the respective states.
2. The SAU/ICAR report should be certified/signed by the competent authority, page-wise with seal and date.
3. Data on tolerance of Bt cotton hybrids to CLCuV in North zone (only for hybrids to be considered for North zone) as evaluated by SAU centre in North Zone/CICR, Sirsa
4. Morphological characters using DUS descriptors as per PPVF&RA guidelines for the hybrids as well as parental lines besides DNA fingerprint details of proposed hybrids and parental lines.
5. Confirmation of gene/ event through molecular characterization by the licensor that the gene/s which is being used is one of the approved events (LOC in original)
6. Level of protein expression in green house and field trials.
7. Bio-efficacy data generated in laboratory conditions

8. Authorization certificate/ No Objection Certificate (NOC) in original from technology provider in case of sub-licensee.
9. Affidavits duly signed by the Notary on Stamp Paper.
10. Submission of event specific primer details to CICR, Nagpur and prescribed fee by the technology provider.
11. Individual application with data pertaining to a single hybrid only should be submitted for each Zone.
12. Number and names of hybrids approved under EBAM so far for each State, names of hybrids available in the market, and how the proposed hybrids are better than the approved hybrids

Recommendations of the Bt cotton hybrids to referral laboratories

The Standing Committee scrutinized the applications for North, Central and South Zones taking into consideration the TOR of the Committee stipulated by GEAC and also the additional parameters mentioned in the Call for Applications published on the DBT Biosafety Website. The Committee considered the following parameters for evaluating and recommending the commercial release of the Bt. Cotton hybrids expressing four approved events under EBAM while making recommendations for the consideration of the different State Agriculture Departments under intimation to the GEAC:

1. Confirmation of gene/ event through molecular characterization by the licensor that the gene/s which is being used is one of the approved events (LOC in original)
2. Level of protein expression in green house and field trials
3. Morphological characters using DUS descriptors as per PPVF&RA guidelines
4. Bio-efficacy data generated in laboratory conditions
5. Authorization certificate/ No Objection Certificate (NOC) in original from technology provider in case of sub-licensee
6. Affidavits duly signed by the Notary on Stamp Paper
7. Field trial data of the particular hybrid at least for one year from the concerned SAU
8. Data on tolerance of Bt cotton hybrids to CLCuV in North Zone (only for hybrids to be released in North Zone) as evaluated by SAU Centre in North Zone/CICR, Sirsa

The Committee observed that some applicants have given only one SAU report for each Zone and therefore the Committee unanimously decided that based on the performance of hybrid reported in the SAU/ICAR trial report, the proposed Bt cotton hybrid should be recommended to the respective State Agriculture Department only, and not for the entire zone, for commercial release under EBAM. The Committee also noted that SAU report from Rajasthan has indicated bollworm complex damage in Bt cotton hybrids tested there. As decided in the previous meeting, the Committee took the decision that the test hybrids which showed bollworm complex damage should not be recommended for commercial release in Rajasthan.

Based on the SAU/ICAR trial report, the Committee categorized the applications for commercial release of Bt cotton hybrids in respective States of North Zone under two Sets as under:

- Set 1- Recommended cases: SAU/ICAR trial data is available, yield of the hybrid is at par or better than the check, and it is CLCuV disease tolerant (only in case of North Zone States)
- Set 2- Deferred till the decision of GEAC is received: SAU/ICAR data is partially available or non-available, yield of the hybrid is lower than the check, susceptible to CLCuV disease, and hybrid showed bollworm complex damage.

Based on the SAU/ICAR reports, the Committee recommended the Bt cotton hybrids for commercial release in respective States in North Zone as per Annexure-I. The decision on the applications which come under Set-2 was deferred till the decision of GEAC on the revision of TOR is received. The Committee directed the Member Secretary to issue the recommendation letters to different State Agriculture Departments in North Zone, State-wise, for recommended Bt cotton hybrids under intimation to GEAC, on the same lines in the previous meeting.

In respect of Central and South Zones, the Committee observed that more than 250 applications have been received for consideration. In many of these applications, SAU data was incomplete for scrutiny/ evaluation of the performance of the test hybrids. The following discrepancies were observed in the SAU reports:

1. Seed cotton yield with CD and CV of the proposed hybrid and the checks not submitted.
2. Pest and disease reactions especially for bollworm complex not reported.
3. Bollworm incidence reported as 'below ETL'. The percentage of bollworm incidence not given.
4. The performance comparison done with non-Bt check or with low yielding check. The comparison with statistical analysis should be done with best performing Bt check.
5. Some hybrids as well as checks have shown very low yield.
6. Proposed hybrids are not mentioned in the SAU report; or the hybrid names are written wrongly.
7. The SAU reports are not certified by the competent authority. The SAU report should be signed by the signing authority page-wise, affixing stamp/seal and date.

In view of the large number of applications and incomplete SAU reports, the Committee found it very difficult to evaluate and recommend the Bt cotton hybrids for commercial release. The Committee directed the Member Secretary to write a common letter to all applicants to recheck their applications and SAU reports and resubmit the same with requisite information by 30th April, 2012 for further consideration.

Other items with the permission of the Chair:

1. Communication received from GEAC regarding the letter from Karnataka State Department of Agriculture in respect of R&D trials and BRL trials in Karnataka State

The Committee noted that GEAC has informed that KSBB communication dated 21.01.2012 does not refer to commercial cultivation of approved Bt cotton hybrids but refers to the requirement of KSBB approval for field trials of Bt crops under BDA 2002. Therefore, the matter does not pertain to EBAM.

2. Communication received from GEAC; Director, CICR; DOR, PAU; CCS, HAU and DOR, SKRAU regarding the use of pigeon pea as refugia crop in place of non Bt cotton seed in North Zone

The Committee noted the communications received from Member Secretary, GEAC; CICR, Nagpur and SAUs viz., PAU; HAU and SKRAU communicating that pigeon pea is not a preferred refugia crop in North Zone and only non-Bt cotton seeds may be used as refugia in North Zone. It was also noted that spotted boll worm and pink boll worm which are the major pests on cotton, are not the pests of pigeon pea and therefore pigeon pea cannot be used as alternate host/refugia in place of non-Bt cotton seed. In addition, pigeon pea is not grown in north western India where cotton is being grown and therefore farmers will not accept it as refugia. SAUs have suggested that local *Gossypium arboreum* variety/hybrids as well as *Gossypium hirsutum* can be used as refugia in North Zone.

3. Request from Navkar Hybrid Seeds Pvt. Ltd., Ahmedabad for permission to use pigeon pea as refuge in Central and South Zones

The Committee noted the communication received from Member Secretary, GEAC dated 22.3.2012 stating that the use of pigeon pea as refugia with Bt cotton may be considered only with respect to Central and South Zones and not for North Zone. The Committee advised the Member Secretary to communicate the same to the applicant.

With the above, the meeting ended with thanks to the Chair. The minutes are approved with incorporation of suggestions and modifications.

Sd/-

(Dr. N. Gopalakrishnan)

Chairman, Standing Committee &
ADG (Commercial Crops), ICAR, New Delhi

Place: New Delhi

Date: 20.04.2012