

**MINUTES OF THE 162nd MEETING OF GENETIC ENGINEERING APPRAISAL
COMMITTEE HELD ON 30.07.2026**

The 162nd meeting of the Genetic Engineering Appraisal Committee (GEAC) of the Ministry of Environment, Forest and Climate Change (MoEF&CC) was held on 30.07.2026 in virtual mode at Godavari Conference Hall, MoEF&CC, New Delhi, under Chairpersonship of Shri Amandeep Garg, Additional Secretary, MoEF&CC, and Co-Chairpersonship of Dr. Nitin K Jain, Scientist H, Department of Biotechnology (DBT). The list of participants is placed at **Annexure 1**.

At the outset, Chairperson, GEAC welcomed all the members. Member Secretary was requested to begin the discussion on agenda items.

Action: GEAC Secretariat

Agenda Item No. 1: Leave of absence

Decision

Absence of members who could not attend the meeting was noted.

Action: GEAC Secretariat

Agenda Item No. 2: Confirmation of minutes of the 161st GEAC meeting

Minutes of the 161st GEAC meeting were circulated to all the members for comments and minutes were suitably amended to incorporate the comments received from the members.

Decision

Members confirmed the minutes of the 161st GEAC meeting.

Action: GEAC Secretariat

Agenda Item No. 3: Action taken report on the decisions taken in the 161st GEAC meeting

Member Secretary, GEAC briefed about the action taken on the decisions at the 161st meeting of GEAC. The committee was informed that letters communicating GEAC decisions had been issued to applicants, and all other concerned as required.

Decision

The Committee noted the actions taken by the Secretariat.

Action: GEAC Secretariat

**Agenda Item No. 4: Applications related to Confined Field Trials of GE crops
(Event Selection Trails/ BRL-I/ BRL-II Trials)**

4.1 M/s. Bioseed Research India Ltd., Hyderabad to conduct Biosafety Research Level-I (BRL-I) 1st year trial of five GE cotton hybrids (Bio1200-2, Bio1300-2, Bio029-2, Bio6001-2, Bio6040-2) harbouring Event BioCotX24A1 expressing *cry8Ea1(X24A1DM)* gene, five GE cotton breeding stack hybrids (Bio1200-6, Bio1300-6, Bio029-6, Bio6001-6, Bio6040-6) containing Event BioCotX24A1×MON15985 expressing *cry8Ea1(X24A1DM)*, *cry1Ac* and *cry2Ab* genes, and its three GE parental lines (P-71, P-712 and P-116) harbouring the Event BioCotX24A1, for broad & durable resistance to bollworms including pink bollworm (*Pectinophora gossypiella*), American cotton bollworm (*Helicoverpa armigera*), and cotton leafworm (*Spodoptera litura*) during Kharif 2026

The proposal submitted by M/s. Bioseed Research India Ltd., Hyderabad seeking permission to conduct Biosafety Research Level-I (BRL-I) 1st year trial of five GE cotton hybrids (Bio1200-2, Bio1300-2, Bio029-2, Bio6001-2, Bio6040-2) harbouring Event BioCotX24A1 expressing *cry8Ea1(X24A1DM)* gene, five GE cotton breeding stack hybrids (Bio1200-6, Bio1300-6, Bio029-6, Bio6001-6, Bio6040-6) containing Event BioCotX24A1×MON15985 expressing *cry8Ea1(X24A1DM)*, *cry1Ac* and *cry2Ab* genes, and its three GE parental lines (P-71, P-712 and P-116) harbouring the Event BioCotX24A1, for broad & durable resistance to bollworms including pink bollworm (*Pectinophora gossypiella*), American cotton bollworm (*Helicoverpa armigera*), and cotton leafworm (*Spodoptera litura*) during Kharif 2026 at total 13 trial site locations across north, central and south cotton growing zones viz. Panghal, Hisar, Haryana; CCSHAU, Hisar, Haryana; PAU, Bathinda, Punjab; Shala, Dhar, MP; Mathela, Khandwa, M.P.; RVSKVV, Gwalior, MP; Bharthana, Bharuch, Gujarat; JAU, Junagadh, Gujarat; Jalna, Maharashtra; PDKV, Akola, Maharashtra; UAS, Raichur, Karnataka; Yadgir, Karnataka; and ANGRAU, Guntur, AP.

Earlier, the proposal for conduct of BRL – I 1st year of GE cotton hybrids carrying Event BioCotX24A1 expressing *cry8Ea1 (X24A1DM)* gene was considered in 154th GEAC meeting held on 17.04.2025 under Agenda item 4.1 and GEAC recommended to conduct trails at five trial sites i. CCSHAU, Hisar, Haryana ii. Panghal, Hisar, Haryana iii. Bathinda Station, PAU Ludhiana, Punjab iv. JAU, Junagadh, Gujarat v. NAU, Navsari, Gujarat during Kharif season 2025-2026.

The present proposal was considered and deliberated upon during the 339th meeting of the Review Committee on Genetic Manipulation (RCGM) held on 08.07.2026. Subsequently, the RCGM, forwarded the recommendations of the 339th meeting vide email dated 15.07.2026 and recommended the proposal to the GEAC for further consideration.

The applicant has submitted No Objection Certificates (NOCs) from the State Governments of Haryana, MP, Gujarat, Karnataka and Punjab.

Recommendations

GEAC deliberated on the proposal. Based on the recommendation given in the 339th RCGM meeting and NOCs of state government, the proposal of M/s. Bioseed Research India Ltd., Hyderabad seeking permission to conduct Biosafety Research Level-I (BRL-I) 1st year trial of five GE cotton hybrids (Bio1200-2, Bio1300-2, Bio029-2, Bio6001-2, Bio6040-2) harbouring Event BioCotX24A1 expressing *cry8Ea1(X24A1DM)* gene, five GE cotton breeding stack hybrids (Bio1200-6, Bio1300-6, Bio029-6, Bio6001-6, Bio6040-6) containing Event BioCotX24A1×MON15985 expressing *cry8Ea1(X24A1DM)*, *cry1Ac* and *cry2Ab* genes, and its three GE parental lines (P-71, P-712 and P-116) harbouring the Event BioCotX24A1, for broad & durable resistance to bollworms including pink bollworm (*Pectinophora gossypiella*), American cotton bollworm (*Helicoverpa armigera*), and cotton leafworm (*Spodoptera litura*) during Kharif 2026 was recommended by the committee at the following sites;

- i. Panghal, Barwala, Hisar, Haryana;
- ii. CCSHAU, Hisar, Haryana;
- iii. PAU, Bathinda, Punjab;
- iv. Shala, Dhar, MP;
- v. Mathela, Khandwa, M.P.;
- vi. RVSKVV, Gwalior, MP;
- vii. JAU, Junagadh, Gujarat;
- viii. UAS, Raichur, Karnataka; and
- ix. Yadgir, Karnataka;

As per the application the proposed objectives of the BRL-I trial are:

1. Genetic Stability & Molecular Validation:

- Quantification of the expressed proteins [X24A1DM (*Cry8Ea1*), *Cry1Ac* and *Cry2Ab*] at various growth stages.

2. Resistance and Agronomic Performance:

- Comparative assessment of phenotypic characters to establish phenotypic equivalence.

3. Trait efficacy studies:

- Trait efficacy targeting major lepidopteran pests of cotton, namely *Pectinophora gossypiella* (Pink Bollworm), *Helicoverpa armigera* and *Spodoptera litura*.

4. Environmental safety studies:

- Weediness and aggressiveness potential.

- Assessment of effects of GE plants on soil microorganisms.
- Study on pests/diseases and beneficial organisms and non-target insects.

5. **Food and Feed Safety Studies:**

- To produce material needed for food and feed safety assessments to conduct:
 - i. Compositional studies with Stacked event BioCotX24A1×MON15985, Stacked event BioCotX24A1×MON531, single event BioCotX24A1, and non-transgenic hybrid at Northern, Central and Southern zone.
 - ii. Feeding studies with Wistar Rats, juvenile fish, broiler chickens with stacked event BioCotX24A1×MON15985, stacked event BioCotX24A1 × MON531, single event BioCotX24A1, Non-Transgenic hybrid. Material collection from Shala, Dhar, MP
 - Protein safety studies with Recombinant Protein X24A1DM (*Cry8Ea1*)
 - a) Equivalence of E. coli and plant-expressed proteins;
 - b) Pepsin Digestibility Assay;
 - c) Protein Thermal Stability;
 - d) Acute oral toxicity study

6. **Crossability Studies:**

- *Intraspecies crossability*: To check pollen movement up-to a distance of 50m in all the four directions. The trial is proposed to be conducted at Bioseed Research Station, Mathela, Khandwa.
- *Interspecies crossability*: To study crossability of the transgenic cotton with closely related species. The trial will include *BioCotX24A1* (*G. hirsutum*), its stacks and lines of *Gossypium arboreum*, *Gossypium herbaceum* and *Gossypium barbadense*. The trial is proposed to be conducted under contained conditions (poly house) at company owned farm located at Janwada, Hyderabad.

The recommendation is subject to following conditions:

- i. The applicant shall adhere to the conditions of 339th RCGM meeting held on 08.07.2026.
- ii. The applicant shall adhere with the conditions and/or recommendations mentioned in concurrence obtained from Government of Gujarat vide letter dated 14.05.2026; Government of Karnataka vide letter dated 18.06.2026; Government of Punjab vide letter dated 08.07.2026; Government of Haryana vide letter dated

- 15.04.2026 and Government of Madhya Pradesh vide letter dated 15.04.2026.
- iii. Interspecies crossability studies should be conducted under contained conditions (e.g., in a poly house) with appropriate containment measures and complete experimental specifications to prevent the escape of transgenic pollen into the environment.
 - iv. The BRL-I confined field trials should be conducted at insect specific hotspot in the trial sites that are appropriate to evaluate the introduced insect resistant trait in the GE plant.
 - v. The applicant shall share details of the trial site as required under part G of the Guidelines and SOPs for Confined Field Trials of regulated GE plants, 2008 including ownership of trial site.
 - vi. The applicant shall share information regarding confirmed availability of isolation distance, land use and its ownership, name of the trial-in charge/lead scientist responsible for each trial, as well as expected date of sowing, before start of the trial.
 - vii. Upon successful completion of intended BRL-I 1st year confined field trials, all the findings/ report of these BRL-I trials including *Intraspecies and Interspecies crossability* studies be reviewed by RCGM in consonance with the findings/ report of Event Selection Trials under confined field conditions. Accordingly, the furtherance, if any, of these BRL-I confined field trials should be taken into consideration by RCGM.

RCGM may issue the permit letters and monitor confined field trials to ensure compliance of prescribed terms and conditions. The permit letter shall, inter-alia, mention the constitution and Terms of Reference of Central Compliance Committee, including participation of State Government representative therein. The permit letter, for confined field trial site, to be issued under intimation to the concerned State Government.

Action: GEAC Secretariat

The meeting ended with a vote of thanks to the Co-Chair and all the Members.

Annexure 1

List of Participants

Members who participated	
1 Shri Amandeep Garg Chairman Additional Secretary, MoEFCC, Indira Paryavaran Bhawan, Jor Bagh road, Aliganj, New Delhi- 110003	7 Dr. Prabodh Trivedi, Member Director, CSIR- CIMAP Lucknow - 226015
2 Dr. Nitin K. Jain Co - Chairman Scientist H, Department of Biotechnology, Block 2 CGO Complex, Lodhi Road, New Delhi - 110 003	8 The Chairman, Member Central Pollution Control Board, New Delhi
3 Sh. Tarun Kumar Kathula Vice-Chair Scientist G, MoEFCC, Indira Paryavaran Bhawan, Jor bagh, Aliganj, New Delhi- 110003	9 Dr. J.P. Singh Member Plant Protection Adviser Directorate of Plant Protection, Quarantine & Storage, NH IV, Faridabad-121001. Delhi Office: Room No. 409, 'B' Wing, Shastri Bhawan, New Delhi
4 Dr. Satish Wate Member Former Director, CSIR-National Environmental Engineeri ng Research Institute (NEERI) Nagpur- 4 40020	10 Dr Naveen C. Bisht, Member Scientist-VI, National Institute of Plant Gen ome Research (NIPGR)
5 Dr. Chaitanya Joshi Member Director, Gujarat Biotechnology Research Centre, Gandhinagar, Gujarat- 382 011	11 Dr. Ruchi Singh Member Scientist-G and Head, Discovery Research Division, ICMR Headquarters, New Delhi
6 Dr. Anand D. Ballal, Member Scientific Officer H & Head, Nuclear Agriculture & Biotechnology Division, BARC, Trombay, Mumbai	12 Dr. Abhilasha Singh Mathuriya Member Secretary, Scientist D, CS-III Division, Ministry of Environmen, Fo rest and Climate Change, Jor bagh, New D elhi-110003
Members who not participated	
1 Dr. D.K. Yadav Member ADG, (Crop Science) Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001	3 Prof. (Dr.) Unnat P. Pandit Member Controller General of Patents, Designs & Trade Marks (CGPDTM)
2 Prof. (Dr.) U. S. N. Murthy Member Director, National Institute of Pharmaceutical Education and Research, Guwahati- 781 101	4 Dr. Tanu Jain, Director, Member National Center for Vector Borne Diseases Control (NCVBDC), New Delhi
