

**MINUTES OF THE 153rd MEETING OF THE GENETIC ENGINEERING APPRAISAL
COMMITTEE HELD ON 03.10.2024**

The 153rd meeting of the Genetic Engineering Appraisal Committee (GEAC) of the Ministry of Environment, Forest and Climate Change (MoEF&CC) was held on 03.10.2024 in hybrid mode at Godavari Conference Hall, Fifth Floor, Akash Block, Indira Paryavaran Bhawan, New Delhi. The meeting was chaired by Shri Amandeep Garg, Additional Secretary, MoEF&CC. 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

Five members communicated their inability to attend the 153rd meeting of GEAC, namely Dr. U.S.N. Murthy, Dr. Sanjeev Khosla, Dr. Dinkar M. Salunke, Dr. P. Suprasanna, and Dr. Sathish Wate. Further, Dr. H.K Sharma, Dr. Vinay K. Nandicoori, Ms. Shruthi Singh, Dr. J.P. Singh, Shri V.P. Yadav, Dr. Alka Rao, Dr. Rubina Bose, Dr. Regha S. Singhal did not attend the meeting.

Decision:

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

Action: GEAC Secretariat

Agenda Item No. 2: Confirmation of minutes of the 152nd GEAC meeting

Under agenda item 5.6 of the 152nd GEAC meeting, following has been recommended:

vi. "The applicant shall ensure strict compliance of zero discharge of viable GE *Pichia kudriavzevii* strain PMCC/Y/107 into the environment at any stage including import, transport, storage, production, recovery, handling, management etc."

The Committee was informed that the strain name of Genetic engineered organism considered for the commercial production of 2,3 Butanediol (2,3 BDO) under the Agenda item 5.6 of the 152nd GEAC meeting has been inadvertently mentioned as "*Pichia kudriavzevii* strain PMCC/Y/107". The strain name "*Pichia kudriavzevii* strain PMCC/Y/107", mentioned under Recommendation vi. of Agenda Item 5.6 in the minutes of 152nd GEAC meeting, is to be read as "*Saccharomyces cerevisiae* strain YA1245-1." Members were requested to provide comments, if any.

Decision:

Members noted the corrections in the minutes and confirmed the minutes of the 152nd GEAC meeting with corrections.

Action: GEAC Secretariat

Agenda Item No. 3: Action taken report on the decision taken in the 152nd GEAC meeting

The Committee was briefed about the action taken on the decisions at the 152nd meeting of GEAC. Member Secretary informed that letters communicating GEAC decisions had been issued to applicants, concerned States and Ministries/ Departments/committees, as required.

Decision:

The Committee noted the actions taken by the Secretariat.

Action: GEAC Secretariat

Agenda Item No. 4: Standard Risk Assessment and Risk Management Plan

4.1 Recommendation received from 289th RCGM meeting held on 24.07.2024, regarding:

1. Standard Risk Assessment and Risk Management Plan (RARMP) for Environmental Safety for Undertaking Commercial Production of Ethanol Using Genetically Modified Organisms at the Distilleries.

2. Risk Assessment and Risk Management Plan (RARMP) for Import of Genetically engineered organism for the purpose of commercial production.

The Committee was apprised that in the 151st GEAC meeting held on 19.12.2023, under agenda item no. 5.2, deliberations were held with regard to requirement of developing a standard Risk Assessment & Risk Management Plan (RARMP) in respect to environmental safety, for considering proposals related to large scale/ commercial production of ethanol using genetically modified organisms (GMOs) at the distilleries. Accordingly, RCGM was requested to prepare a standard RARMP pertaining to environmental safety while undertaking commercial production of ethanol using GMOs at the distilleries.

In the 151st GEAC meeting held on 19.12.2023, under agenda item no. 6.1, deliberations were held with regard to requirement of developing a standard RARMP pertaining to storage, transportation, access, handling, packing, re-packing, distribution, sale, decontamination, and disposal of GMO consignment imported for the purpose of commercial production. Accordingly, the Committee requested RCGM to prepare a standard RARMP pertaining to storage, transportation, access, handling, packing, re-packing, distribution, sale, decontamination, and disposal of GMO consignment imported for the purpose of commercial production.

Accordingly, the application was considered by RCGM in its 289th RCGM meeting held on 24.07.2024, wherein recommendation regarding the following was submitted:

- I. Standard Risk Assessment and Risk Management Plan for Environmental Safety for Undertaking Commercial Production of Ethanol Using Genetically Modified Organisms at the Distilleries.
- II. Risk Assessment and Risk Management Plan for Import of Genetically engineered organism for the purpose of commercial production.

The committee members were requested to provide any comments on the RARM plan.

The Committee was also apprised of the recommendations under agenda item 6.4 of the 152nd GEAC meeting, wherein the Committee directed the GEAC Secretariat to share the standard RARMP, once approved, with all applicants whose proposals for the import of genetically engineered (GE) yeast have been recommended by the Committee in past four years for compliance henceforward.

Recommendation:

The committee appreciated the RCGM for preparing standard RARM plans (i) for Environmental Safety for Undertaking Commercial Production of Ethanol Using Genetically Modified Organisms at the Distilleries, and, (ii) for Import of Genetically engineered organism for the purpose of commercial production.

After extensive deliberations, the Committee recommended the RARMPs, prepared by RCGM with few additions/modifications.

Action: GEAC Secretariat

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

Annexure 1**List of Participants**

Members who participated	
1. Shri Amandeep Garg, Chairman-GEAC Additional Secretary, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jorbagh road, Aliganj, New Delhi- 110003	7. Dr. J. P. Shukla, Scientist, CSIR-Advanced Materials and Process Research Institute, Bhopal- 462 026
2. Dr. Sanjay Kumar Mishra, Co-Chairman-GEAC Scientist H, Department of Biotechnology, Block 2 CGO Complex, Lodhi Road, New Delhi - 110 003	8. Dr. P.K. Dass. Department of Anatomy, LHMC & Associated Hospitals, New Delhi- 110 001
3. Sh. Raghu Kumar Kodali, Vice-Chairman-GEAC Scientist G, MoEFCC MoEFCC, Indira Paryavaran Bhawan, Jorbagh road, Aliganj, New Delhi- 110003	9. Dr. Chaitanya Joshi, Director, Gujarat Biotechnology Research Centre, G andhinagar, Gujarat- 382 011
4. Dr. D.K. Yadav, ADG (Seed), Crop Science Division, Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001	10. Dr. Nitin K. Jain, Scientist–G and Member Secretary RCGM, Department of Biotechnology, C.G.O Comp lex, Lodhi Road, New Delhi-110003
5. Dr. Geeta Jotwani, Scientist G, Indian Council of Medical Research (ICMR), Ministry of Health and Family Welfare, Ramalingaswami Bhavan, Ansari Nagar, New D elhi—110 029	11. Dr. Abhilasha Singh Mathuriya, Member Secretary-GEAC Scientist D, CS-III Division, Ministry of Environment, Fo rest and Climate Change, Jorbagh, New D elhi-110003
6. Dr. Pronab Dhar, Principal Scientist, ICAR-Indian Veterinary Research Institute (IVRI), Bareilly, Uttar Pradesh- 243122 (Representative of Dr. Triveni Dutt, Director, IVRI)	
Members who did not participate	
1. Dr. P. Suprasanna, Scientific Officer H (Retd.), Biosciences group, BARC, Mumbai-400 085	8. Dr. Dinkar M. Salunkhe, Director, International Centre for Genetic Engineering and Biotechnology, New Delhi-110 067

2.	Dr. Vinay K. Nandicoori, Director, CSIR-Centre for Cellular & Molecular Biology, Hyderabad - 500 007	9.	Ms. Shruti Singh, Joint Secretary, IPR, Department for Promotion of Industry and Internal Trade, Udyog Bhawan, New Delhi 110011
3.	Dr. Sanjeev Khosla, Director, CSIR- Institute of Microbial Technology, Chandigarh- 160 036	10.	Dr. H. K. Sharma, Director, National Institute of Technology, Agartala, Tripura- 799 046
4.	Dr. Satish Wate, Former Director, CSIR-National Environmental Engineering Research Institute, Nagpur- 440020	11.	Shri V.P. Yadav, Scientist F, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110 032
5.	Dr. Alka Rao, Principal Scientist, Protein Science and Engineering & Adjunct Associate Professor, GNR Protein Centre, CSIR-Institute of Microbial Technology (CSIR-IMTECH), Sector 39-A, Chandigarh-160036	12.	Dr. J.P. Singh, Plant Protection Adviser (PPA), Directorate of Plant Protection, Quarantine & Storage, NH IV, Faridabad-121001. New Delhi
6.	Dr. Rekha S. Singhal, Professor, Food Technology, Institute of Chemical Technology, Mumbai- 400 019	13.	Dr. Rubina Bose, Deputy Drugs Controller, Central Drugs Standard Control Organization, Ministry of Health and Family Welfare, FDA Bhavan, ITO, Kotla Road, New Delhi -110002 (Representative of Drugs Controller General of India)
7.	Dr. U. S. N. Murthy, Director, National Institute of Pharmaceutical Education and Research, Guwahati- 781101		
Officers from BSU-RCGM			
1.	Dr. Pranjali Vishwakarma, Scientist BSU-RCGM- Department of Biotechnology, C.G.O Complex, Lodhi Road, New Delhi-110003	2.	Dr. Govind Kumar Rai, Coordinator & Scientist III Biosafety Support Unit, RCGM, Department of Biotechnology, C.G.O Complex, Lodhi Road, New Delhi-110003