PROCEEDINGS OF THE 141st MEETING OF THE GENETIC ENGINEERING APPRAISAL COMMITTEE HELD ON 24.11.2020

The 141st meeting of the Genetic Engineering Appraisal Committee (GEAC) of the Ministry of Environment, Forest and Climate Change (MoEF&CC) was held on 24.11.2020 virtually through video conferencing. The meeting was chaired by Mrs. B.V. Umadevi, Additional Secretary, MoEF&CC. The list of participants is placed at **Annexure.**

At the outset, Smt. B.V. Umadevi, Chairperson, GEAC welcomed all the members. Ms. Richa Sharma, Vice Chair mentioned that GEAC meetings had moved to the virtual mode during the pandemic situation, and this is the third virtual meeting being organized within seven months.

Agenda Item No. 1: Leave of absence

Four Members communicated their inability to attend the 141st meeting of GEAC, namely Prof. P. Balasubramanian, Dr. Sushil Gupta, Dr. Lalitha Gowda and Dr. P. Suprasanna.

Decision:
Leave of absence was granted to the members who could not attend the meeting.

Action: GEAC Secretariat

Agenda Item No. 2: Confirmation of minutes of the 140th GEAC meeting

Minutes of the 140th GEAC meeting were circulated to all the members for comments. Minutes were suitably amended to incorporate the comments received from the members.

Decision:
Members confirmed the minutes of the 140th GEAC meeting.

Action: GEAC Secretariat

Agenda Item No. 3: Action taken report on the decision taken in the 140th GEAC meeting

Member Secretary, GEAC briefed about the action taken on the decisions at the 140th meeting of GEAC. He informed that letters communicating GEAC decisions had been issued to applicants.

Decision:
The Committee noted the actions taken by the Secretariat.

Action: GEAC Secretariat

Agenda Item No. 4: Applications related to Commercial/ Environmental release

4.1 Application for Environmental approval for Biopharmaceutical Drugs (Insulin Aspart) derived from Living Modified Organisms (Recombinant *Escherichia coli*) by M/s GeneSys Biologics Pvt. Ltd., Hyderabad.

The proposal of M/s GeneSys Biologics Pvt. Ltd., Hyderabad seeking environmental approval of large scale production of Insulin Aspart Biopharmaceutical drugs from Recombinant *Escherichia coli* (LMO) was deliberated and the committee recommended the proposal.

Decision:

The application of M/s GeneSys Biologics Pvt. Ltd., Hyderabad for Environmental approval for Biopharmaceutical Drugs (Insulin Aspart) derived from Living Modified Organisms (Recombinant *Escherichia coli*) was recommended with the following conditions:

a. Submission of Environmental Risk Management and Safety Plan (ERMP) within 3 months to this Ministry;
b. Submission of compliance report on ERMP plan every six months to the concerned Regional Office of this Ministry;
c. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.
d. The project should be implemented under the oversight of IBSC of the applicant with regular annual reports to RCGM.
e. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
f. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
g. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

The Review Committee on Genetic Manipulation (RCGM) to examine and submit a Risk Assessment and Risk Management Plan to GEAC, which would be shared with applicant for compliance.

Action: GEAC Secretariat

4.2 Request for renewal of GEAC permission/NOC for therapeutic and non-therapeutic protein products for manufacture, storage and transfer of genetically engineered *Escherichia coli* cells (insulin aspart mix 30) by M/s. BioGenomics Limited, Maharashtra.

4.3 Request for renewal of GEAC permission/NOC for therapeutic and non-therapeutic protein products for manufacture, storage and transfer of genetically engineered *Escherichia coli* cells (insulin glargine) by M/s. BioGenomics Limited, Maharashtra.

4.4 Request for renewal of GEAC permission/NOC for therapeutic and non-therapeutic protein products for manufacture, storage and transfer of genetically engineered *Escherichia coli* cells (r-met-GCSF (filgrastim)) by M/s. BioGenomics Limited, Maharashtra.

The above proposals of M/s. BioGenomics Limited, Maharashtra seeking renewal of GEAC permission/NOC for therapeutic and non-therapeutic protein products for large scale manufacture, storage and transfer of genetically engineered ***Escherichia coli*** **cells** was deliberated by the committee and it was observed that the firm had not obtained GEAC approvals earlier and hence renewal cannot be considered.

Decision:

GEAC Secretariat may consider the agenda items 4.2 to 4.4 on merits and take a view with regard to violations as per rules, with the approval of Chair, GEAC. The decision taken in this regard, would be placed before the next GEAC meeting for ratification.

Action: GEAC Secretariat

4.5 Application for Environmental approval and manufacturing of recombinant Liraglutide using *Escherichia coli* culture at 200 litres fermentation scale by M/s. Sajjala Bio Labs Pvt Ltd., Hyderabad.

The proposal of M/s. Sajjala Bio Labs Pvt Ltd., Hyderabad for environmental approval of large scale manufacturing of recombinant Liraglutide using *Escherichia coli* culture was deliberated and the committee recommended the proposal.

Decision:

The application of M/s. Sajjala Bio Labs Pvt Ltd., Hyderabad for environmental approval of large-scale manufacturing of recombinant Liraglutide using *Escherichia coli* was recommended with the following conditions:

a. Submission of Environmental Risk Management and Safety Plan (ERMP) within 3 months to this Ministry;
b. Submission of compliance report on ERMP plan every 6 months to the Regional Office of the Ministry of Environment, Forest and Climate Change
c. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.
d. The project should be implemented under the oversight of IBSC of the applicant with regular annual reports to RCGM.
e. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
f. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
g. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

The Review Committee on Genetic Manipulation (RCGM) to examine and submit a Risk Assessment and Risk Management Plan to GEAC, which would be shared with applicant for compliance.

Action: GEAC Secretariat

4.6 Application for Environmental Approval and Manufacturing of COVI-VAC at 60 L to 100 L Process Scale involving SARS-CoV-2 for Clinical Study by M/s. Serum Institute of India Pvt. Ltd., Pune.

M/s. Serum Institute of India Pvt. Ltd., Pune has submitted an online application dated 27.10.2020 for seeking Environmental Approval for Manufacturing of COVI-V AC at 60 L to 100 L Process Scale involving SARS-CoV-2 for Clinical Study. RCGM in its 187th meeting held on 13.08.2020 had accorded one-time approval to handle DCX-005 candidate vaccine strain in enhanced BSL-2 facility for Research and Development studies on pilot scale (10L), with strict adherence to the following conditions:

i. The handling of CDX-005 strain must comply with all the requirements related to code of practice and implementation of safety practices.
ii. Health and medical surveillance of workers must be monitored and records duly maintained.
iii. The strain must be continuously monitored and the data generated should be submitted for RCGM consideration, at regular intervals.
iv. The vaccine strain needs to be strictly monitored for its genetic stability at whole genome level (not just the spike protein) in viruses passaged in cell lines.
v. The applicant must generate and submit additional data for:
    - Virus titre in all organs over a period of incubation and to check presence of any rebound/reverted virus,
    - Virus titres in cell culture

The proposal of M/s. Serum Institute of India Pvt. Ltd, Pune for production at 60-100 litres process scale was deliberated by the committee. It was observed that the SARS virus is attenuated therefore the clinical trials are being conducted in BSL-2 enhanced facility. Further, RCGM informed that the firm had not yet submitted the information regarding health and medical surveillance of workers, genetic stability, strain monitoring data, virus titre in all organs and cell cultures as desired by RCGM (mentioned above).

Decision:

The committee has taken the following decisions:

i. Directed the firm M/s. Serum Institute of India Pvt. Ltd., Pune to provide information regarding health and medical surveillance of workers, genetic stability, strain monitoring data, virus titre in all organs and cell cultures as desired by RCGM at the earliest;
ii. Once the data is approved by RCGM, RCGM is requested to inform the same to GEAC for consideration of environmental approval;
iii. The GEAC Secretariat after examining the RCGM comments, would submit the proposal before the Chair of GEAC for consideration of environmental approval for production at 60-100 litres process scale of CoVI-VAC with appropriate conditions;
iv. The decision taken by the Chair, GEAC would be placed in the next GEAC meeting for ratification.

Action: GEAC Secretariat

4.7 Application for Environmental Approval of Urease enzyme (produced by recombinant DNA technology in *Escherichia coli* for being a part of sorbent cartridge) by M/s. Unique Biotech Limited, Hyderabad.

The proposal of M/s. Unique Biotech Limited, Hyderabad for Environmental

Approval of large-scale manufacture of Urease enzyme produced by recombinant DNA technology in *Escherichia coli* for being a part of sorbent cartridge was initially discussed in the 138th meeting of GEAC held on 11.11.2019 and the committee deferred the request of the applicant and directed to re-submit the application after obtaining requisite clearances on pre-clinical toxicity studies from RCGM.

In this regard, RCGM, vide Letter dated 10.09.2020, had recommended the application. As the Urease enzyme would not come in direct contact with blood, its pre-clinical toxicity (PCT) studies were not required. Further, RCGM had directed the applicant to approach GEAC for export (of Urease enzyme produced by recombinant DNA technology in *Escherichia coli* for being a part of sorbent cartridge) and for environmental approval.

The committee recommended the proposal for manufacturing of Urease enzyme as proposed above. However, the committee was of view that the applicant had to apply to Directorate General of Foreign Trade for seeking approval for export of their products instead of applying to GEAC.

Decision:

The application of M/s. Unique Biotech Limited, Hyderabad seeking Environmental Approval of large scale manufacture of Urease enzyme produced by recombinant DNA technology in *Escherichia coli* for being a part of sorbent cartridge) was recommended with the following conditions:

a. Submission of Environmental Risk Management and Safety Plan (ERMP) within 3 months to this Ministry;
b. Submission of compliance report on ERMP plan every 6 months to the Regional Office of the Ministry of Environment, Forest and Climate Change
c. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.
d. The project should be implemented under the oversight of IBSC of the applicant with regular annual reports to RCGM.
e. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
f. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
g. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

The Review Committee on Genetic Manipulation (RCGM) to examine and submit a Risk Assessment and Risk Management Plan to GEAC, which would be shared with applicant for compliance.

Action: GEAC Secretariat

4.8 Application for Environmental approval for Biopharmaceutical Drugs (Human Insulin) derived from Living Modified Organisms (Recombinant *Escherichia coli*) by M/s. GeneSys Biologics Pvt. Ltd., Hyderabad.

The proposal of M/s. GeneSys Biologics Pvt. Ltd., Hyderabad for large scale production of Biopharmaceutical Drugs (Human Insulin) derived from Living

Modified Organisms (Recombinant *Escherichia coli*) has been deliberated and committee recommended the proposal.

Decision:

The application of M/s GeneSys Biologics Pvt. Ltd., Hyderabad for Environmental approval for Biopharmaceutical Drugs (Human Insulin) derived from Living Modified Organisms (Recombinant *Escherichia coli*) was recommended with the following conditions:

a. Submission of Environmental Risk Management and Safety Plan (ERMP) within 3 months to this Ministry;
b. Submission of compliance report on ERMP plan every 6 months to the Regional Office of the Ministry of Environment, Forest and Climate Change
c. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.
d. The project should be implemented under the oversight of IBSC of the applicant with regular annual reports to RCGM.
e. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
f. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
g. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

The Review Committee on Genetic Manipulation (RCGM) to examine and submit a Risk Assessment and Risk Management Plan to GEAC, which would be shared with applicant for compliance.

Action: GEAC Secretariat

Agenda Item No. 5: Applications related to Import/ Export

5.1 Request for approval for the import of GM Microorganisms producing natural pigments from *Escherichia coli* and *Pseudomonas* (*Escherichia coli, Pseudomonas putida and Pseudomonas fluorescens*) (LacZ cassete, KanR CDS, pBR322 ORI, pUC1 ori, pBBR1 oriV) by M/s. Arvind Limited, Ahmedabad.

The proposal of M/s. Arvind Limited, Ahmedabad for the import of GM Microorganisms producing natural pigments from *Escherichia coli* and *Pseudomonas (Escherichia coli, Pseudomonas putida and Pseudomonas fluorescens*) for Production of natural pigments for color, from Colorfix, a UK based biotechnology and dyeing firm was approved by the committee.

However, it was observed that Institutional Biosafety Committee had not been constituted by the firm M/s. Arvind Limited, Ahmedabad. The firm in their presentation mentioned that *Escherichia coli* and *Pseudomonas* were in low risk category and used at the dyeing stage and the final product would not contain GMOs or biomass resulting from a GMO. It was also mentioned that the microorganisms were not intended to be used for consumption or deliberate release in the environment. The applicant also informed that the import would be for commercial production. Therefore, the import is in accordance with the

"Regulations and Guidelines for Recombinant DNA Research and Biocontainment, 2017".

Decision:

The application of M/s Arvind Limited, Ahmedabad for import of GM Microorganisms producing natural pigments from *Escherichia coli* and *Pseudomonas* (*Escherichia coli, Pseudomonas putida and Pseudomonas fluorescens*) (LacZ cassete, KanR CDS, pBR322 ORI, pUC1 ori, pBBR1 oriV) was recommended with the following conditions:

i) The firm M/s Arvind Limited, Ahmedabad will constitute Institutional Biosafety Committee;
ii) The import should be conducted under the oversight of IBSC of the applicant and inform Review Committee on Genetic Manipulation (RCGM), Department of Biotechnology.
iii) For large scale production of dye derived from Genetically Modified Organisms, the applicant is requested to apply to GEAC in Form IIA for further consideration, along with the recommendation of IBSC.

Action: GEAC Secretariat

5.2 Application for obtaining No Objection Certificate to import "Marek's Disease Newcastle Disease Vaccine, Serotype 3, Live Marek's Disease Vector (Brand Name: POULVAC PROCERTA HVT-ND) from USA for Veterinary use by M/s. Zoetis India Limited, Mumbai.

The proposal of M/s. Zoetis India Limited, Mumbai for import of Marek's Disease-Newcastle Disease Vaccine, Serotype 3, Live Marek's Disease Vector (Brand Name: Poulvac Procerta HVT-ND) from USA for Veterinary use was deliberated by the committee. The committee recommended the import and noted that the product is already approved in USA.

The committee also noted that in the previous 140th meeting of GEAC has approved the import applications of M/s Boehringer and M/s Intervet subject to *"initial 3 batches of the subject vaccine to be certified in ICAR-Indian Veterinary Research Institute (ICAR-IVRI), before it is marketed in the country"*.

However, the condition regarding final approval of GEAC after certification by IVRI and before marketing in India were not cited. Therefore, both the firms may be informed about the revision of condition as "*initial 3 batches of the subject vaccine to be certified in ICAR-Indian Veterinary Research Institute (ICAR-IVRI) and final approval of GEAC may be obtained before it is marketed in the country"*.

Decision:

The committee recommended the proposal of M/s. Zoetis India Limited, Mumbai for import of Marek's Disease-Newcastle Disease Vaccine, Serotype 3, Live Marek's Disease Vector (Brand Name: Poulvac Procerta HVT-ND) from USA for Veterinary use subject to the following conditions

i) "Initial 3 batches of the subject vaccine to be certified in ICAR-Indian Veterinary Research Institute (ICAR-IVRI)
ii) Obtain relevant approvals from Department of Animal Husbandry and

Dairying, Drug Controller General of India etc. as per existing Indian laws applicable for import of vaccines.

iii) The final data certified by IVRI to be presented before the GEAC for final approval, before it is marketed in the country.

Further, it was also decided to inform the firms M/s Boehringer and M/s Intervet to submit the final data certified by IVRI before the GEAC for final approval, before it is marketed in the country.

Action: GEAC Secretariat

5.3 Application for obtaining No Objection Certificate to import and distribute recombinant vaccine Bursal Disease-Marek's Disease-Newcastle disease Vaccine Serotype 3, Live Marek's Disease Vector, Live frozen vaccine from USA by M/s. Ceva Polchem Private Limited, Pune.

The proposal of M/s. Ceva Polchem Private Limited, Pune to import and distribute recombinant vaccine Bursal Disease-Marek's Disease-Newcastle disease Vaccine Serotype 3, Live Marek's Disease Vector, Live frozen vaccine from USA for Veterinary use was deliberated by the committee. The committee recommended the import and noted that the product is already approved in USA.

Decision:

The committee recommended the proposal of M/s. Ceva Polchem Private Limited, Pune to import and distribute recombinant vaccine Bursal Disease-Marek's Disease-Newcastle disease Vaccine Serotype 3, Live Marek's Disease Vector, Live frozen vaccine from USA for Veterinary use subject to the following conditions

i. *"Initial 3 batches of the subject vaccine to be certified in ICAR-Indian Veterinary Research Institute (ICAR-IVRI)*

ii. Obtain relevant approvals from Department of Animal Husbandry and Dairying, Drug Controller General of India etc. as per existing Indian laws applicable for import of vaccines.

iii. The final data certified by IVRI to be presented before the GEAC for final approval, before it is marketed in the country.

Action: GEAC Secretariat

Agenda Item No. 6: Additional Items for consideration/ information

6.1 Discussion on Regulatory Reforms to improve Drug Development in India and Draft Document on Genome Edited Organisms: Regulatory Framework and Guidelines for Risk Assessment, 2019.

The matter was discussed in the 140th meeting of GEAC as Agenda Item No. 7.1 wherein Dr. K.V. Prabhu, Chairman PPV&FRA and Chairman for drafting the "Draft Guidelines for Safety Assessment of Genome Edited Plants" presented the "Draft Guidelines for Safety Assessment of Genome Edited Plants" before the committee and informed GEAC that SDN1 and SDN2 categories of technology did not carry exogenous DNA and were comparable to naturally occurring variance and should be exempted under the Rule 20 of the Rules 1989 of EP, Act, 1986. He also informed that the said guidelines were approved in the 1st Recombinant DNA Advisory Committee (RDAC) held on 14th May 2020 under the Chair of Secretary, DBT.

In this regard, the committee along with special invitees has deliberated whether process or technology can be exempted from Rules 1989 when GEAC is mainly

dealing with the safety of the products at research and development stage and before release into environment. All the members were requested to provide written comments after examining the "Draft Guidelines for Safety Assessment of Genome Edited Plants". Till now, comments have been received from Prof. P. Balasubramanian, Dr. K. Veluthambi, Dr. B. Venkateswarlu, Dr. Nitin K. Jain, Dr. A. K. Bhatnagar, Dr. A. K. Singh and Dr. S. K. Barik and Dr. Kulubuddin Ali Molla, DBT, only.

Decision:

The committee deferred consideration of the agenda and requested remaining members to convey their comments at the earliest.

Action: GEAC Secretariat

6.2 Bt. Brinjal status / seed storage at NBPGR

As per decision taken in the 138th meeting of the GEAC held on 11.11.2019, it was suggested that an optimum quantity of seeds might be retained by M/s Mahyco and the remaining seeds might be considered for disposal as per protocols. In this regard, M/s Mahyco vide communication dated 12.08.2020, informed that out of the total quantity of 683.699 kg, 682.929 kg seeds were disposed of and 0.770 Kg seeds were retained for germination test and submitted to NBPGR.

Submitted for information of the committee.

Action: Submitted for information

6.3 RCGM has approved the "Guidelines for the Establishment of Containment Facilities: Biosafety Levels 2 (BSL-2) & 3 (BSL-3)"

Review Committee on Genetic Manipulation (RCGM), Department of Biotechnology (DBT) had shared the draft document on "Guidelines for the Establishment of Containment Facilities: Biosafety Levels 2 (BSL-2) & 3 (BSL-3)". The draft document describes the principle and components of containment and standards for the establishment of biosafety containment level 2 and 3 facilities. In this regard, the "Guidelines for the Establishment of Containment Facilities: Biosafety Levels 2 (BSL-2) & 3 (BSL-3)" were submitted before the Committee for information.

Member Secretary, RCGM informed GEAC that the document on "Guidelines for the Establishment of Containment Facilities: Biosafety Levels 2 (BSL-2) & 3 (BSL-3)" has been approved by the Chairman RCGM on 04.11.2020 and the notification in this regard will be issued by the Department of Biotechnology shortly.

GEAC advised that the monitoring committee should also include representative from CSIR and Environmental Engineer/Microbiologists, which should be informed to RCGM.

Action: Submitted for information

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

Annexure

List of Participants

Official Members who participated			
1.	**Mrs. B. V. Umadevi** Chairperson, GEAC & Additional Secretary, Ministry of Environment, Forest & Climate Change, JorBagh, Aliganj, New Delhi.	**3.**	**Mrs. Richa Sharma,** Joint Secretary & Vice-Chairperson, GEAC Ministry of Environment, Forest & Climate Change, JorBagh, Aliganj, New Delhi.
2.	**Dr. K. Veluthambi** Co-Chairman, GEAC and Professor (retd) & Head, School of Biotechnology, Madurai Kamaraj University, Madurai	**4.**	**Sh. Tarun Kathula** Scientist-F, and Member Secretary (GEAC), Ministry of Environment, Forests & Climate Change, JorBagh, Aliganj, New Delhi.
Officials/ Expert members			
1.	**Dr. Nitin K.Jain** Scientist –F and Member Secretary, RCGM Department of Biotechnology, C. G. O, Complex, Lodhi Road, New Delhi-110003.	**9.**	**Dr. Dinesh K Agarwal,** Principal Scientist, In charge, Plant Breeding & Genetics, ICAR-Indian Institute of Seed Science Mau, U.P
2.	**Dr. Ashok Bhatnagar,** Former Professor, Department of Botany, University of Delhi, New Delhi	**10.**	**Dr. Usha Rao** Assistant Controller of Patents & Designs, Patent Office, New Delhi, India
3.	**Dr. B. Venkateswarlu** Former Vice-Chancellor Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbani (Maharashtra).	**11.**	**Dr. A.K. Singh,** Head, Division of Genetics, IARI, New Delhi.
4.	**Dr. S. J. Rahman,** Principal Scientist & Univ. Head of Entomology, AICRP on Biological Control Agricultural Research Institute (ARI), Prof. Jayashankar Telangana State Agri. University, Rajendranagar, Hyderabad.	**12.**	**Dr. Geeta Jotwani** Scientist F Indian Council of Medical Research, New Delhi.
5.	**Dr. N. Sathyanarayana** Joint Director Plant Protection Quarantine & storage, NH-IV, Faridabad, Haryana.	**13.**	**Dr. S. K. Barik** Director CSIR- National Botanical Research Institute, Lucknow
6.	**Dr. Madhu Dikshit** Former Director CSIR-Central Drug Research Institute, Lucknow.	**14.**	**Dr. Dilip Markandey** Central Pollution Control Board Parviesh Bhawan, CBD cum office complex, East Arjun Nagar, New Delhi- 110032

7.	**Mr. Jayant Gangakhedkar** Assistant Drugs Controller (I) Central Drugs Standard Control Organizations, FDA Bhawan Kotla Road, New Delhi-110002.	**15.**	**Dr. S De** Principal Scientist Animal Biotechnology Centre, National Dairy Research Institute, Karnal.
8.	**Dr. S. C. Khurana** Food Safety and Standards Authority of India (FSSAI), FDA Bhawan, Kotla Road, New Delhi		**Dr. Ashish Kumar** Joint Director, Ministry of Environment, Forest and Climate Change, New Delhi
Member who did not participate			
1.	**Prof. P. Balasubramanian** Former Director, Centre for Plant Molecular Biology, TNAU, Coimbatore	**3.**	**Dr. Lalitha Gowda,** Former Chief Scientist, CSIR-CFTRI Mysore, Karnataka-570 020, India
2.	**Dr. Sushil Gupta,** Former Chairman, Central Ground Water Board, New Delhi	**4.**	**Dr. P. Suprasanna** Scientific Officer H (level 14) Biosciences Group, BARC, Mumbai.