

Standard Operating Procedure (SOP) for traceability of imported bovine germplasm (bulls, semen doses and embryos) to be followed by importing agencies

Background

As per OIE guidelines, animal identification and animal traceability are tools for addressing animal health and food safety issues. The tools may significantly improve the effectiveness of activities such as the management of disease outbreaks and food safety incidents, vaccination programmes, herd flock husbandry, zoning/compartmentalization, surveillance, early response and notification systems, animal movement controls, inspection, certification, fair practice in trade and the utilization of veterinary drugs, feed and pesticides at farm level.

In view of the above background, traceability of imported bovine germplasm is to be established, recorded and maintained. To achieve the objectives of traceability current Guidelines for export/import of bovine germplasm (revised in April, 2016), mention at Clause No. 2.5 that *The institutes/organization permitted to import bovine germplasm must maintain records to ensure traceability of imported germplasm. Post import information from the date of import to the date of disposal shall be submitted by the importer in prescribed formats to DAHDF (Annexure-I to VII) and State Governments.*

In order to strengthen the traceability of the imported bovine germplasm an Expert Committee was formed by DADF, MoA&FW, GoI and two meetings of this Committee were held at New Delhi on March 22, 2016 and June 21, 2016 respectively under the chairmanship of Animal Husbandry Commissioner GoI. As per the suggestion of the Committee, the present Guidelines for traceability of imported bovine germplasm *i.e.* live cattle, semen and embryos are prepared.

The license for importation to the importing agency during subsequent bovine germplasm import would only be considered if the importing agency has supplied all the documents pertaining to traceability of previously imported bovine germplasm regularly to the DADF.

Standard Operating Procedure (SOP) for traceability of imported germplasm

1. Traceability of imported bulls and semen doses produced from imported bulls:

1.1. Semen production and distribution details of imported bulls:

1.1.1. Importing agencies/ Semen stations should keep record of the organisations to which the imported bulls /semen doses are distributed.

1.1.2. Importing agencies/ Semen stations should keep batch wise semen production record of each bull.

1.1.3. Failure to comply with these minimum stipulation the concerned agency will be banned for subsequent import for a period of 5 years.

1.2. General

1.2.1. Inseminations using semen doses of imported bulls should be carried out as per the notified Breeding Policy of the concerned State.

1.2.2. The data related to the traceability of semen doses of imported bulls should be captured using Information Network for Animal Productivity and Health (INAPH).

1.2.3. Quarterly information should be provided to DADF, MoA&FW, GoI, New Delhi in the prescribed format for submission of post-import information on bovine germplasm as mentioned in latest “Guidelines for export import of bovine germplasm” (**Appendix I**).

1.2.4. Importing agencies/ Semen stations should carry out or arrange to carry out minimum 2200 inseminations per imported bull as soon as possible after bull starts semen donation.

1.2.5. These inseminations should be carried out as early as possible after 2200 doses are made available by the Importing agencies/ Semen stations for field insemination

1.2.6. The infrastructure and manpower required to trace these semen doses shall be independent of existing PT or PS projects being implemented under NDP-I.

1.3. Breedable females

1.3.1. All the breedable females which are going to be followed for traceability, inseminated with minimum 2200 semen doses of imported bulls, should be ear tagged with 12 digit unique identification number (UID number) and registered in INAPH.

1.3.2. Information of breedable females which are going to be followed for traceability need to be captured using INAPH as per latest Guidelines for export import of bovine germplasm of GoI.

1.3.3. Information on pregnancy diagnosis (PD) and calving outcome should be captured for all the animals inseminated with 2200 semen doses, which are followed for traceability.

1.4. Progenies born from use of semen of imported bulls

1.4.1. The progenies (both male and female) which are going to be followed for traceability, born from use of 2200 semen doses of the imported bulls, should immediately be tagged with 12 digit unique identification number (UID number) and registered in INAPH

1.4.2. Information of progenies (both male and female) which are going to be followed for traceability need to be captured using INAPH as per latest Guidelines for export import of bovine germplasm of GoI (**Annexure V, VI and VII within Appendix I**).

1.4.3. The first insemination date, age at first calving, conception rate on first AI basis and complete milk production of minimum 70 female calves (daughters)/bull should be recorded from 2200 inseminations which are followed for traceability (**Annexure VI within Appendix I**). Milk production should be recorded as notified by DADF, MoA&FW, GoI, New Delhi for Progeny Testing and Pedigree Selection vide letter no. F.No.3-13/2012-AHT (NPCBB) dated 6th June, 2012. If possible fat % shall also be recorded.

1.4.4. Other details like sale, mortality etc. till first calving is attained should be recorded for all the female calves born from 2200 inseminations which are followed for traceability.

1.4.5. Number of male calves used for semen production out of male calves born from 2200 inseminations which are followed for traceability, should be recorded (**Annexure VII within Appendix I**).

1.5. For traceability of Health issues of imported bulls and use of semen doses of imported bulls:

1.5.1. Health related reports of the imported bulls should be collected/traced as per prescribed guidelines (**Appendix II**) till death of the bull.

1.5.2. In case of death of the imported bull, the post mortem report should be provided as per prescribed format (**Appendix III**).

1.5.3. Importing agencies/ Semen stations should report information on mortality of the inseminated cows or progenies born from use of the semen doses of imported bulls.

2. Traceability of imported semen doses

Imported bovine semen including sex sorted semen is being imported by various State AH Departments/ Livestock Development Boards and other agencies for AI. Traceability of progeny born to such imported semen is also very important and need to be recorded and reported.

2.1. Distribution details of imported semen doses:

2.1.1. Importing agencies should keep record of the agencies to which the imported semen doses are distributed.

2.1.2. The importing agency down the line will ensure the data captured as required

2.1.3. Failure to comply with these minimum stipulation the concerned agency will be banned for subsequent import for a period of 5 years.

2.2. General

2.2.1. Inseminations using imported semen doses should be carried out as per the notified Breeding Policy of the concerned State and in as many districts as possible.

2.2.2. The data related to the traceability of imported semen doses should be captured using Information Network for Animal Productivity and Health (INAPH).

2.2.3. Quarterly information should be provided to DADF, MoA&FW, GoI, New Delhi in the prescribed format for submission of post-import information on bovine germplasm as mentioned in latest "Guidelines for export import of bovine germplasm" (**Appendix I**).

2.2.4. Importing agencies/ Semen stations should carry out or arrange to carry out minimum 2200 inseminations of imported semen doses per bull, if the number of

semen doses produced per imported bull is more than 2200 doses. If the number of semen doses produced is less than 2200 semen doses per bull, importing agencies should trace all the inseminations using imported semen doses.

2.2.5. These inseminations should be carried out as early as possible, but not later than 18 months after import of semen doses.

2.2.6. The infrastructure and manpower required to trace these semen doses shall be independent of existing PT or PS projects being implemented under NDP-I.

2.3. Breedable females

2.3.1. All the breedable females which are going to be followed for traceability, inseminated with imported semen doses, should be ear tagged with 12 digit unique identification number (UID number) and registered in INAPH.

2.3.2. Information of breedable females which are going to be followed for traceability need to be captured using INAPH as per latest Guidelines for export import of bovine germplasm of GoI.

2.3.3. Information on pregnancy diagnosis (PD) and calving outcome should be captured for all the inseminated animals which are followed for traceability.

2.4. Progenies born from use of imported semen doses

2.4.1. The progenies (both male and female) which are going to be followed for traceability, born from use of imported semen, should immediately be tagged with 12 digit unique identification number (UID number) and registered in INAPH

2.4.2. Information of progenies (both male and female) which are going to be followed for traceability need to be captured using INAPH as per latest Guidelines for export import of bovine germplasm of GoI (**Annexure II, III and IV within Appendix I**).

2.4.3. The first insemination date, age at first calving, conception rate on first AI basis and complete milk production of 70 female calves (daughters)/bull should be recorded from inseminations using imported semen which are followed for traceability (**Annexure III within Appendix I**). Milk production should be recorded as notified by DADF, MoA&FW, GoI, New Delhi for Progeny Testing and Pedigree Selection vide letter no. F.No.3-13/2012-AHT (NPCBB) dated 6th June, 2012. If possible fat % shall also be recorded.

2.4.4. Other details like sale, mortality etc. till first calving is attained should be recorded for all the female calves born from 2200 inseminations using imported semen which are followed for traceability.

2.4.5. Number of male calves used for semen production out of male calves born from 2200 inseminations using imported semen which are followed for traceability, should be recorded (**Annexure IV within Appendix I**).

2.5. For traceability of Health issues related to use of imported semen doses:

2.5.1. The importing agencies/ Semen stations should report information on mortality of the inseminated cows or progenies born from use of the imported semen doses.

3. Traceability of imported embryos

3.1. Distribution details of imported embryos:

3.1.1. Importing agencies should keep record of the agencies to which all imported embryos are distributed.

3.1.2. The importing agency down the line will ensure the data captured as required

3.1.3. Failure to comply with these minimum stipulation the concerned agency will be banned for subsequent import for a period of 5 years.

3.2. General

3.2.1. Transfer of imported embryos should be carried out as per the notified Breeding Policy of the concerned State.

3.2.2. The data related to the traceability of all imported bovine embryos should be captured using Information Network for Animal Productivity and Health (INAPH).

3.2.3. Quarterly information should be provided to DADF, MoA&FW, GoI, New Delhi in the prescribed format for submission of post-import information on bovine germplasm as mentioned in latest “Guidelines for export import of bovine germplasm” (**Appendix I**).

3.2.4. Importing agencies should trace outcome from transfer of all the imported embryos.

3.3. Recipients

3.3.1. All the recipient animals transferred with imported embryos should be ear tagged with 12 digit unique identification number (UID number) and registered in INAPH.

3.3.2. Information of recipient animals on which imported embryos are used need to be captured using INAPH as per latest Guidelines for export import of bovine germplasm of GoI.

3.3.3. All the recipient animals in which the imported embryos are transferred should be followed for PD and calving.

3.4. Calves born from transfer of imported embryos

3.4.1. All the calves born from transfer of imported embryos (both male and female) should immediately be tagged with 12 digit unique identification number (UID number) and registered in INAPH.

3.4.2. The first insemination date, age at first calving, conception rate on first AI basis of all female calves and complete milk production of 20% female calves born from transfer of imported embryos should be recorded (**Annexure III within Appendix I**). Milk production should be recorded as notified by DADF, MoA&FW, GoI, New Delhi for

Progeny Testing and Pedigree Selection vide letter no. F.No.3-13/2012-AHT (NPCBB) dated 6th June, 2012. If possible, fat % shall also be recorded.

3.4.3. Other details like sale, mortality etc. till first calving is attained should be recorded for all the female calves born from transfer of imported embryos.

3.4.4. Males calves born from transfer of imported embryos should be considered as imported bull and traceability should be followed as for an imported bull, if it is used for semen production.

3.4.5. Importing agencies should keep records of agencies to which the male calves born through transfer of imported embryos are distributed.

3.5. Semen production and distribution details of bulls produced through transfer of imported embryos

3.5.1. Importing agencies/ Semen stations should keep batch wise semen production record of each bull produced through transfer of imported embryos.

3.5.2. Importing agencies/ Semen stations should keep record of all agencies to which semen doses of bulls produced through transfer of imported embryos are supplied.

3.6. Traceability of semen doses of bulls produced through transfer of imported embryos:

3.6.1. General

3.6.1.1. Insemination using semen doses of bulls produced through transfer of imported embryos should be carried out as per the Breeding Policy of the state

3.6.1.2. Quarterly information should be provided to DADF, MoA&FW, GoI, New Delhi in the prescribed format for submission of post-import information on bovine germplasm as mentioned in latest "Guidelines for export import of bovine germplasm" (**Annexure V, VI and VII within Appendix I**).

3.6.1.3. Importing agencies/ Semen stations should carry out or arrange to carry out minimum 2200 inseminations per bull produced through transfer of imported embryos. Doses produced within first 6 months after starting of semen production should be used for the purpose.

3.6.1.4. These inseminations should be carried out within 18 months after 2200 doses are made available by the Importing agencies/ Semen stations

3.6.1.5. The infrastructure and manpower required to trace these semen doses shall be independent of existing PT or PS projects being implemented under NDP-I.

3.6.2. Breedable females

3.6.2.1. All the breedable females which are going to be followed for traceability, inseminated with 2200 semen doses of bulls produced through transfer of imported embryos should be ear tagged with 12 digit unique identification number (UID number) and registered in INAPH.

3.6.2.2. Information of breedable females which are going to be followed for traceability need to be captured using INAPH as per latest Guidelines for export import of bovine germplasm of GoI.

3.6.2.3. Information on pregnancy diagnosis (PD) and calving outcome should be captured for all the inseminated animals which are followed for traceability.

3.6.3. Progenies born from use of semen of bulls produced from imported embryos

3.6.3.1. The progenies (both male and female) which are going to be followed for traceability, born from use of semen of the bulls produced from transfer of imported embryos, should immediately be tagged with 12 digit unique identification number (UID number) and registered in INAPH

3.6.3.2. Information of progenies (both male and female) which are going to be followed for traceability need to be captured using INAPH as per latest Guidelines for export import of bovine germplasm of GoI (**Annexure V, VI and VII within Appendix I**).

3.6.3.3. The first insemination date, age at first calving, conception rate on first AI basis and complete milk production of minimum 70 female calves (daughters)/bull should be recorded from 2200 inseminations which are followed for traceability (**Annexure VI within Appendix I**). Milk production should be recorded as notified by DADF, MoA&FW, GoI, New Delhi for Progeny Testing and Pedigree Selection vide letter no. F.No.3-13/2012-AHT (NPCBB) dated 6th June, 2012. If possible fat % shall also be recorded.

3.6.3.4. Other details like sale, mortality etc. till first calving is attained should be recorded for all the female calves born from 2200 inseminations which are followed for traceability.

3.6.3.5. Number of male calves used for semen production out of male calves born from 2200 inseminations which are followed for traceability, should be recorded (**Annexure VII within Appendix I**).

3.7. For traceability of Health issues related to use of imported embryos

3.7.1. The importing agencies should report information on mortality of the recipient cows or calves born from transfer of the imported embryos.

3.7.2. Health related reports of the bulls produced through transfer of imported embryos should be collected/ traced as per prescribed guidelines (**Appendix II**) till death of the bull.

3.7.3. In case of death of the bulls produced through transfer of imported embryos the post mortem report should be provided as per prescribed format (**Appendix III**)

3.7.4. The importing agencies/ Semen stations should report information on mortality of the inseminated cows or progenies born from use of the semen doses of bulls produced through transfer of imported embryos.

The committee will be constituted by DADF, MoA&FW, GoI to evaluate the traceability mechanism undertaken by importing agencies and based on the imported germplasm the documents submitted to DADF, New Delhi.

Guidelines for export /import of bovine germplasm (Revised April 2016)

The import and export of the cattle/ buffalo germplasm is under the restricted list and is allowed against license(s) issued by the Directorate General of Foreign Trade, Ministry of Commerce on the recommendation of the Department of Animal Husbandry dairying & Fisheries.

Introduction of temperate dairy breeds in the country for crossbreeding indigenous non - descript cattle has been accepted for quite some time now. In pursuance to this need has been felt by a number of State Governments/ Organisations to import exotic germplasm to produce quality cross -bred animals. With the extension of the breeding programme and the artificial breeding network, a surge in demand for exotic germplasm is also expected. Accordingly, import of germplasm must be from the sires, which have been progeny tested or **genomically tested** and are in active use in cattle breeding.

There is a definite demand for the germplasm of Indian breeds of cattle and buffaloes in South America, South Asia and other countries. Keeping in view our responsibility towards conservation of the rich diversity, of indigenous breeds it is important to broadly identify germplasm of cattle and buffalo meant for breeding purposes and for the export. Imposing a complete ban on the export of Indigenous germplasm because of conservation concerns could be counterproductive, since such a ban may encourage the flow of germplasm through illegal trade which is not desirable.

Accordingly, it is essential to have guidelines in place for processing such applications for import and export of bovine germplasm, in order to streamline procedures and ensure efficient and transparent processing.

Guidelines for export /import of bovine germplasm

Guidelines for the Import of bovine germplasm:

1 : Import of bovine germplasm will be permitted for breeding purpose only.

2 : Eligibility of Importers

2.1: Institutes/organizations capable of maintaining performance records of exotic germplasm shall only be permitted to import bovine germplasm and the capability of institutions in this regard will be evaluated by the Department of Animal Husbandry, Dairying and Fisheries (DAHDF).

2.2: Application for Import of germplasm shall be accompanied with the following documents:

(i) No objection certificate from the State Government of the State in which germplasm is proposed to be utilized.

(ii) Complete genetic and production data /information, including genetic marker report with respect to the germplasm proposed to be imported.

- (iii) The justifications for import.
- (iv) The future roadmap for utilization of imported germplasm.
- (v) Information on feeding ingredients and feeding schedule of the animals.

2.3: The import shall be based on the standard lactation yield or projected standard lactation yield based on a minimum of first six months lactation, milk fat, protein, somatic cell count (SCC) and other milk component character standards. The type evaluation shall form the integrated component of selection. Breeding value for production and type traits shall be estimated on the basis of the daughters' born in the exporting country.

2.4: Information on the germplasm proposed to be imported shall be authenticated by agencies recognised by the Government of the country (for example , USDA in case of US, CDN for Canada, INRA for France, etc.) from which the germplasm is proposed to be imported.

2.5: The institutes/organization permitted to import bovine germplasm must maintain records to ensure traceability of imported germplasm. Post import information from the date of import to the date of disposal shall be submitted by the importer in prescribed formats to DAHDF (Annexure-I to VII) and State Governments.

2.6: The guidelines formulated by OIE, Codex Alimentarius and IETS shall be strictly adhered to while importing the genetic material.

2.7: The pre and post import quarantine measures for live animals and germplasm shall be strictly adhered in accordance with GOI health protocols.

2.8: Along with other documents the State shall submit notified copy of its bovine breeding policy.

2.9: State may generally be allowed to import upto one lakh doses of frozen semen and 100 frozen embryos in a year while import of live animals is to be discouraged. However, the Department may be open to examine the cases on State to State basis.

2.10: Only those agencies shall be allowed to import live animals who are maintaining A or B graded semen stations and have a network of AI technicians in the country.

2.11: The State/importing agency shall submit individual animal wise traceability report using UID, and data shall be uploaded on to INAPH data base.

2.12: The State/importing agency shall furnish the details of traceability of previous germplasm import, if applicable, upto individual animals along with success rate of AI/ embryo transfer.

3 : Screening Committee:

3.1: A Technical screening committee constituted by DAHDF will critically evaluate data submitted by the importer and breeding companies duly authenticated by the recognised Government Agency in country of export.

3.2: All the applications for the import of germplasm will be examined by 'Trade and Investment Matter Committee' of the Department of Animal Husbandry, Dairying and Fisheries (DAHDF).

4 : Veterinary Certificates:

4.1: The imports shall be regulated as per the provision of Livestock Importation Act, 1898, amended from time to time and as per the protocols/ veterinary certificates for import of cattle and buffaloes, gonads/ embryos/ semen as prescribed by DAHDF and as amended from time to time.

5 : Order of import:

5.1: For import of germplasm, the order of preference shall be frozen semen, frozen embryos and live animals. Import of live animals shall be allowed only if there is a strong justification. Import shall be based on the assessment of the domestic requirement of bulls and bull mothers, and their availability in the country.

6 : Standards for Import of Germplasm:

6.1: Semen:

6.1.1: Unsexed semen:

6.1.1.1: Semen shall be from progeny tested sires with positive sire indices/breeding values for conception rate (DPR/SCR), volume of milk and total fat and total protein.

6.1.1.2: Sire's daughters' average standard lactation yield shall be above 9000 kg in the case of HF and 6000 kg in the case of Jersey.

6.1.1.3: Sire's daughters' average milk fat shall be above 3.5% or above 315 kg for standard lactation yield in the case of HF; and above 4.5% or above 270 kg in the case of Jersey.

6.1.1.4: Sire's daughters' average protein % or total protein per lactation shall be above the average of the concerned breed in the exporting country

6.1.1.5: Sire's daughters' average somatic cell count (SCC) shall be below the prescribed limit average of the concerned breed in the exporting country or its appropriate breeding value or somatic cell score (SCS) may be considered if SCC is not available.

6.1.1.6: Reliability of breeding value for production characters shall be more than 80% for both HF and Jersey.

6.1.1.7: Sires shall have good type characters like udder and feet conformation.

6.1.1.8: Sire shall be free from all known **breed specific** genetic disorders including Bovine Leukocyte Adhesion Disease (BLAD), Deficiency of Uridine Mono-phosphate Synthase (DUMPS), Citrulinemia (Deficiency of Argininosuccinate Synthetase), Factor XI Deficiency, Complex Vertebral Malformation (CVM) and Brachyspina.

6.1.2: **Sexed Semen**

6.1.2.1: Sexed semen shall be from credible sources and shall meet the standards of sires given under item No. 6.1.1 or

6.1.2.2: Sexed semen could be from genomically tested sires meeting the following criteria:

(a) The sire should have positive GEBVs (Genomic Estimated Breeding Values) for total milk yield, total milk fat, total milk protein and daughters pregnancy rate/sires conception rate.

(b) The reliability of GEBVs for milk, fat and protein yield should be above 50% for Jersey and above 65% for HF.

(c) The sire should have positive GEBV for type characters like udder and feet and leg conformation.

6.1.2.3: Sire shall be free from all known **breed specific** genetic disorders as mentioned at clause No. 6.1.1.8

6.1.2.4: The percentage of error of sex shall not be more than 10% and reduction in fertility shall not be more than 10% of normal semen use.

6.2: Embryos:

6.2.1.: Embryos from a donor cows or heifers not genomically tested, the donor cow/heifers' dam should meet the following criteria:

(a) Donor cows or heifer's dam should have the standard 1st lactation yield above 9,000 kg in the case of HF and above 6000 kg in the case of Jersey.

(b) The average milk fat of the Donor cow's or heifers' dam shall be above 3.5% or 315 kg for standard 1st lactation yield in the case of HF and above 4.5% or above 270 kg in the case of Jersey.

(c) The average protein % or total protein for standard 1st lactation yield of Donor cow's or genomically tested heifers' dam shall be above the average of the concerned breed in the exporting country.

(d) The average somatic cell count (SCC) of Donor cow's or heifers' dam shall be below the prescribed limit average of the concerned breed in the exporting country or its appropriate breeding value or somatic cell score (SCS) may be considered if SCC is not available.

6.2.2: Embryos from genomically tested heifers, the heifers should meet following criteria:

a) The Heifer should have positive GEBVs (Genomic Estimated Breeding Values) for total milk yield, total milk fat, total milk protein.

b) The reliability of GEBVs for milk, fat and protein yield should be above 50%

for Jersey and above 65% for HF.

c) The heifer should have positive GEBV for type characters like udder and feet and leg conformation.

6.2.3: Semen of sire used for inseminating donor or genomically tested heifer for embryo production shall meet the specifications for semen given under item 6.1.

6.2.4: The donor cow or genomically tested heifer shall be free from all known **breed specific** genetic disorders as mentioned at clause No.6.1.1.8

6.3: Young bulls

6.3.1: The Genomically tested young bull should meet the criteria mentioned at clause No. 6.1.2.2.

6.3.2: The young bull not having genomic breeding value should meet the following criteria:

(a) The dam of the young bull should meet the criteria mentioned at clause No. 6.2

(b) The sire of the young bull should meet the criteria mentioned at clause No. 6.1.1 or 6.1.2

6.3.3: The young bulls or genomically tested young bulls shall be free from all known **breed** specific genetic disorders as mentioned at clause No.6.1.1.8

6.4.: Young Heifers

6.4.1: Early pregnant heifers with pregnancy not more than 4 to 5 months at shipping;

1. Donors Cows

6.4.2: Only young heifers born to dams or produced using embryos produced from donor cows meeting criteria mentioned at under 6.2 and by using semen of the sire meeting criteria mentioned at 6.1 shall be imported.

B: Donor Heifers

6.4.3: The heifers' dam shall meet the standards specified under 6.2 and sire shall meet the standards specified under 6.1

6.5: Import of germplasm of indigenous breeds

6.5.1: Government agencies/others identified by the State Government may be allowed to take up import of indigenous germplasm either in the form of semen, embryos or live animals.

6.5.2: Donor/animal shall be true to the breed type

6.5.3: Performance of the donor/animal shall be above the elite animals of the concerned breed available in the India.

Guidelines for Export of bovine germplasm:

1: Export of live animals (bovine) and bovine germplasm will be permitted for breeding purposes only.

2: The export of germplasm will be allowed subject to the fulfillment of the following conditions:-

2.1: For export of germplasm, order of preference shall be: (i) frozen semen, (ii) frozen embryos and (iii) lastly live animals.

2.2: Animals shall conform to breed characteristics.

2.3: Milk production records of breed averages will be considered during export of live animals.

2.4: Elite animals (top 20% of the production level) of each breed having best milk production level shall not be exported.

2.5: Each year not more than exceed 5% of the estimated population of the concerned breed in India shall be exported.

2.6: Export of live animals of some of the indigenous breeds categorised as **threatened/ endangered** shall not be allowed.

2.7: The health certificate requested by the importing authorities will be provided by a registered Veterinarian duly authorized by DAHDF.

2.8: The State Government of the State from which germplasm is proposed to be exported will issue an NOC for the proposed export. The State Government shall maintain detailed data on the exported animals and shall inform DAHDF on quarterly basis.

2.9: For export of Embryos/ and ova, the collection and processing techniques as

stipulated under section 3.3 Appendix 3.3.1.1 to 3.3.1.13 and micro- manipulation of the Bovine Embryos at Appendix 3.3.3.1 to **3.3.3.5** of the OIE Terrestrial Animal

Health code **(2005)** as amended from time to time shall be adhered to.

2.10: Collection and processing procedure of semen as per section 3.2, Appendix 3.2.1.1 to 3.2.1.10 of the OIE Terrestrial Animal Health code **(2005)** as amended from time to time shall be complied with.

2.11: The exporting agency will comply with the rules and regulations of DAHDF. The exporting agencies are required to provide the following documents to DAHDF: (i) Import requirement of the country(s) which are interested in importing the bovine germplasm, (ii) import policy documents of the importing country and (iii) health protocols.

Format for submission of post-import information on bovine germplasm

1. Name of the organisation:
2. Address with telephone/fax numbers and email:
3. Year-wise and breed-wise number of bovine germplasm imported
 - (a) Bulls:
 - (b) Heifers:
 - (c) Embryos:
 - (d) Frozen Semen (sexed / unsexed):
 - (e) Others:
4. Country of origin of the imported germplasm:
5. Cost on CIF basis:
6. Purpose of importation:
7. Identification No., date of birth and pedigree details: (preferably by RFID tags for imported animals).
8. Name and address of the Farms/Semen Stations where the germplasm were stationed:
9. Best, average and life time lactation yield (in case of milch animal), number of frozen semen doses produced (in case of male stock) during life time/after importation and average production per year :
10. Age at culling/disposal of the imported animal as well as reason and mode of disposal :
11. Report of congenital anomalies in progeny, if any :
12. No. of lactation/calf born during life time/after importation (in case of heifer/cows) :
13. Traceability of progeny of imported stock and progeny records in terms of distribution, location, production records and disposal.
14. Other relevant information, if any.

Annexure-II

Imported frozen semen and Embryos usage bull-wise

Name of the agency

Quarter of reporting

SN	Bull No.	State and Districts	No. of imported doses used	Conception rate on first AI basis	Calves born		Any genetic defect observed	No. of female and male calves alive
					Male	Female		
Total								

Annexure - III

Performance of females born

SN	Name of the State	Name of the District	No. of daughters calved	Average age at first calving (months)	Average lactation yield of daughters (kg)
Total					

Annexure - IV

Performance of males born and used for semen production

SN	Name of the State	Name of the District	No. of males used for semen production
Total			

Annexure-V

Use of frozen semen produced from imported bulls - bull-wise

Name of the agency

Quarter of reporting

SN	Bull No.	State and Districts	No. of imported doses used	Conception rate on first AI basis	Calves born		Any genetic defect observed	No. of female and male calves alive
					Male	Female		
Total								

Annexure - VI

Performance of females born from the use of semen produced from imported bulls

SN	Name of the State	Name of the District	No. of daughters calved	Average age at first calving (months)	Average lactation yield of daughters (kg)
Total					

Annexure - VII

Performance of males born from the semen produced from imported bulls

SN	Name of the State	Name of the District	No. of males used for semen production
Total			

Routine prophylaxis and health management

The details of deworming, vaccination, de-ticking, hoof-trimming etc. of the imported bulls shall be recorded in the following format:

Format for recording prophylaxis and health management of imported bulls

S. no.	Ear tag nos.	Prophylaxis										Health management				Remarks		
		FMD		HS		BQ		Theileriosis		Anthrax		De-ticking		Deworming			Hoof-trimming	
		Activity date	Next due date	Activity date	Next due date	Activity date	Next due date		Activity date	Next due date								

Disease testing

The details of all the routine disease testing carried out on the imported bulls shall be recorded in the following format:

Format for recording disease testing details of imported bulls

S.no	Ear tag nos.	Sampling details				Test results*							FMD titre*			Remarks		
		Date of test / sample collection	Type of sample	Laboratory details	Next due date	TB	JD	Brucella	IBR	Campylobacteriosis	Trichomonosis	Other (specify)	P	NP	Protected			

*Further details shall be available in the detailed test reports.

Isolation

In the event of the imported bull showing any symptoms indicative of an infectious disease, the animal should be immediately isolated and shifted to an isolation shed and the following details recorded:

Format for recording isolation details of imported bulls in case of infectious diseases									
SN	Date	Animal Ear tag No	Shed and pen no. where the animals was housed	Symptoms noticed	Disease suspected	Date of shifting to isolation	Treatment given (yes/no)	Date of return to bull shed if cured (with shed & pen no.)	Remarks

Treatment

The date-wise details of all the treatment carried out on the imported bull should be recorded as per the following format:

Format for capturing disease and treatment details of imported bulls											
SN	Date	Animal Ear Tag No	Shed and pen no.	Rectal Temp with recording time	Major symptom(s) noticed	Treatment(s) given	Name of Vet who attended	Sample(s) collected if any	Laboratory details	Disease suspected /diagnosed	Remarks

Conduct of postmortem and disposal of carcass

In the event of death of the imported bull, a full post-mortem should be conducted by a registered veterinarian to ascertain the cause of the death.

The PCICDA Rules, 2010 notified by the GoI on the manner of conducting the post mortem examination shall be adhered to while conducting the post mortem. The post-mortem report described as per the Form C in the Rules need to be filled by the registered veterinarian. The same is provided as **Appendix III** in the present document.

The PCICDA Rules, 2010 notified by the GoI on disposal of carcass shall be adhered to while disposing the carcass.

Samples and impression smears shall be collected from all the vital organs. Clear photographs shall be taken of any gross lesions seen externally or internally. Clear photographs of all the vital organs seen shall be taken and maintained along with the PM record.

Reporting

Report on the health and traceability of the imported animals shall be made on a quarterly basis to DADF, GoI as per format provided in Annexure I of Appendix II. In addition to this, immediate reporting shall be done to GoI through phone, e-mail in case of any untoward occurrence in the imported bulls.

Culling

The imported bulls shall be culled immediately in case of positivity to any diseases mentioned in the MSP and the matter reported to DADF, GoI. In case the culling is due to other reasons, the same may also be communicated to DADF, GoI.

The details of culling of the imported bull/discarding its frozen semen in case of the animal testing positive to any of the diseases mentioned in the MSP must be recorded in the following format:

Format for recording the details of imported bulls and frozen semen that are culled/discarded due to disease								
Animal culling details					Frozen semen discard details			Remarks
S.no	Animal ear tag no.	Disease for which positive	Date testing/sample collection	Date animal culled	Previous sample collection/testing date with negative result	No. of semen doses produced since previous negative result	No. of frozen semen doses discarded	

Documentation

Proper documentation of all the health activities shall be made in the Semen stations Management Software (SSMS) once it is in place. Till such time SSMS is deployed the formats described herein shall be used.

Quarterly traceability report

Annexure I

Quarterly traceability report of imported bulls										
I	Name of SS:					Date (dd/mm/yy)				
ii	Report for quarter (<input type="checkbox"/>)	Apr-Jun(Q1)	July-Sep(Q2)	Oct-Dec(Q3)	Jan-Apr(Q4)					
iii	Whether any imported bull has been shifted to any other location outside the Semen stations: (Yes/No): If yes, fill in the details below:									
<i>S.no</i>	<i>Ear tag No.</i>	<i>Breed and age</i>		<i>Address of new location</i>			<i>Date of shifting</i>			
	(Add rows as required)									
iv	Disease testing of imported bulls tested during the quarter									
<i>Ear tag nos.</i>		<i>TB (DTH testing)</i>			<i>JD (DTH testing)</i>			<i>Brucella (ELISA)</i>		
		<i>Testing date</i>	<i>Result (+ve/-ve)</i>	<i>Next due date</i>	<i>Testing date</i>	<i>Result (+ve/-ve)</i>	<i>Next due date</i>	<i>Testing date</i>	<i>Result (+ve/-ve)</i>	<i>Next due date</i>
(Add rows as required)										
<i>Ear tag nos.</i>		<i>IBR (ELISA)</i>			<i>BGC (Culture)</i>			<i>Trichomonosis (Culture)</i>		
		<i>Testing date</i>	<i>Result (+ve/-ve)</i>	<i>Next due date</i>	<i>Testing date</i>	<i>Result (+ve/-ve)</i>	<i>Next due date</i>	<i>Testing date</i>	<i>Result (+ve/-ve)</i>	<i>Next due date</i>
(Add rows as required)										
		<i>FMD antibody titre (P/NP)</i>			<i>Remarks</i>					
		<i>O</i>	<i>A</i>	<i>Asia-1</i>						
(Add rows as required)										
P=Protected NP=Not protected										
v	Vaccination details of imported bulls									
<i>Ear tag nos.</i>	<i>FMD</i>		<i>HS</i>		<i>BQ</i>		<i>Theileria</i>			

	<i>Vaccination date</i>	<i>Next due date</i>						
(Add rows as required)								

<i>Ear tag nos.</i>	Anthrax		Other (specify)		<i>Remarks</i>			
	<i>Vaccination date</i>	<i>Next due date</i>	<i>Vaccination date</i>	<i>Next due date</i>				
(Add rows as required)								

Vi Deworming/deticking/hoof trimming details of imported bulls

<i>Ear tag nos.</i>	<i>Deworming</i>			<i>De-ticking</i>			<i>Hoof-trimming</i>		<i>Remarks</i>
	<i>Date</i>	<i>Next due date</i>	<i>Drug used</i>	<i>Date</i>	<i>Next due date</i>	<i>Drug used</i>	<i>Date</i>	<i>Next due date</i>	
(Add rows as required)									

Vii Ailments/diseases reported in imported bulls during the quarter

<i>Ear tag nos.</i>	Whether any infectious conditions/ ailments seen? (Yes/No)	Details if Yes	Whether any laboratory confirmation available (Yes/No)	Whether the animal was isolated (Yes/No)	Whether treatment provided (Yes/No)	<i>Remarks</i>
(Add rows as required)						

Place:

Date:

Signature of Semen stations in charge

Appendix III**Post mortem report**

PM report No.		PM conducted at (location of death/ other)	
PM date		PM time	
Ref. by		Ref. date	
1. Animal detail			
Species		Breed	
Sex		Age (years)	
Identification No.		Colour	
Height		Any other	
Identification mark			
History of illness and treatment			
Date of death		Time of death	
2. Animal owner detail			
Name			
Address			
3. External examination			
Body condition of the carcass		External orifices	
Hair coat		Udder	
Rigor mortis		Mucous membranes	
Wound/tumour (location & dimension)		Bones and joints	

Other observations			
4. Internal examination			
Thoracic Cavity			
Ribs			
Cartilage			
Pleura			
Diaphragm			
Larynx			
Trachea			
Bronchi			
Lungs			
Lymph nodes			
Pericardium			
Endocardium			
Myocardium			
Aorta			
Auricles			
Ventricle			
Other observations			
Abdominal cavity			
Peritoneum			
Fluid (colour, quantity and consistency)			

Lymphnodes	
Oesophagus	
Rumen/Stomach/Proventriculus	
Reticulum	
Omasum	
Abomasum	
Small intestine	
Large intestine	
Mesentery	
Portal veins	
Liver	
Gall bladder	
Pancreas	
Kidney & adrenals	
Ureters	
Urinary bladder	
Spleen	
Other observations	
Pelvic cavity	
Testicle	
Epididymis	
Spermatic cord	
Scrotum	
Prostrate	

Penis	
Vulva	
Cervix	
Vagina	
Uterus	
Other observations	
Head and neck	
Scalp	
Skull bones	
Meninges	
Brain	
Spinal cord	
Cervical vertebra	
Thyroids/parathyroids	
Other observations	
5. Specimen collection details	
Specimen type	
Preservatives used	
Tests required	
Laboratory address	
6. Special observation or abnormalities	

7. Opinion as to the probable cause of death

8. Post Mortem Report Issue Details

Date of issue:

Signature:

Place of issue:

Name and designation:

Registration number with State Veterinary

Council/Veterinary Council of India:

Office Seal