

## **Guidelines for export /import of bovine germplasm (Revised December 2013)**

The import and export of the cattle/ buffalo germplasm is under the restricted list and is allowed against license(s) issued by 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 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, 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 IV) 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.

### **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.

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 be "improver" for type characters like udder and feet conformation.

6.1.2: Sire shall be free from all known genetic disorders including bovine leukocyte adhesion disease (BLAD), deficiency of uridine mono-phosphate synthetase (DUMPS), citrulinemia (deficiency of argino-succinate synthetase), Factor XI, Complex vertebral Malformation (CVM) etc.

6.1.3: Sexed semen shall be from credible sources and shall meet the standards of sires given under item No. 6.1.1 to 6.1.2 above. 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 shall be from:

- (a) donor cows with minimum standard 1<sup>st</sup> lactation yield above 9,000 kg in the case of HF and above 6,000 kg in the case of Jersey or
- (b) from genomically tested heifers whose dam shall be with minimum standard lactation yield above 9,000 kg in the case HF and above 6,000 kg in the case of Jersey.

6.2.2: The average milk fat of the Donor cow's or heifers' dam shall be above 3.5% or 315 kg for standard 1<sup>st</sup> lactation yield in the case of HF and above 4.5% or above 270 kg in the case of Jersey.

6.2.3: The average protein % or total protein for standard 1<sup>st</sup> lactation yield of Donor cow's or heifers' dam shall be above the average of the concerned breed in the exporting country.

6.2.4: 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.

6.2.5: 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.

### **6.3: Young bulls**

#### **A. Young bulls produced from cows and Embryos produced from donor cows:**

6.3.1.1: Only young bulls born to dams or produced using embryos produced from donor cows with standard 1<sup>st</sup> lactation yield above 9,000 kg in the case of HF and 6,000 kg in the case of Jersey shall be imported.

6.3.1.2: The average milk fat of Dam or donor cow shall be above 3.5% or 315 kg for standard 1<sup>st</sup> lactation yield in the case of HF & 4.5% or 270 kg in the case of Jersey.

6.3.1.3: The average protein % or total protein for standard lactation yield of Dam or donor cow shall be above the average of the concerned breed in the exporting country.

6.3.1.4: The average somatic cell count (SCC) of Dam or donor cow shall be below the prescribed limit average of the concerned breed in the exporting country.

6.3.1.5: Young bulls shall fulfill all other health and 'breeding soundness' criteria for selection.

6.3.1.6: Sires of young bulls should meet the specifications for semen given under item No. 6.1 above.

**6.3.1.7: *If the sire of a young bull is genomically tested, the requirements from 6.1.1.1 to 6.1.1.6 will not apply.***

**6.3.1.8: *Semen shall be used only from genomically tested sires with positive indices/breeding values for volume of milk and total fat and total protein.***

**6.3.1.9: *Reliability of breeding value for production traits shall be 50% or above.***

**6.3.1.10: *Sires shall be "improver" for the characters like udder and feet conformation.***

**6.3.1.11:** *DPR(daughter Pregnancy Rate) and SCR (Sire Conception Rate), if available, should be comparable to the average of the concerned breed in the exporting country.*

**B:** Young bulls produced using embryos produced from heifers:

6.3.1.7: Heifers dam and sire shall meet the standards specified under items 6.3.1.1 to 6.3.1.6

### **6.3.2: Young Heifers**

**A:** Young heifers produced from cows and embryos produced from donor cows:

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

6.3.2.2: Only young heifers born to dams or produced using embryos produced from donor cow with standard 1<sup>st</sup> lactation yield above 9,000 kg in the case of HF & 6,000 kg in the case of Jersey shall be imported.

6.3.2.3: The average milk fat of Dam or donor cow shall be above 3.5% or 315 kg for standard 1<sup>st</sup> lactation yield in the case of HF & 4.5% or 270 kg in the case of Jersey.

6.3.2.4: Sire of heifer shall meet the specifications for semen given under item 6.1.

6.3.2.5: Young heifer shall fulfill all other health and breeding soundness criteria for selection.

**B:** Young heifers produced using embryos produced from heifers:

6.3.2.5: Heifers dam and sire shall meet the standards specified under item 6.3.2.1 to 6.3.2.5.

### **6.4: Import of germplasm of indigenous breeds**

6.4.1: 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.

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

6.4.3: 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:
3. Year-wise and breed-wise number of bovine germplasm imported since 1980 onwards
  - (a) Bulls:
  - (b) Heifers:
  - (c) Embryos:
  - (d) Frozen Semen:
  - (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 doses usage bull wise:****Name of the Agency:****Quarter of reporting**

S. No.	Bull No.	No. of imported doses used	Conception rate on first AI basis	Overall conception rate	Calves born		Any genetic defect observed	No. of male and female calves alive
					Male	Female		
<b>Total</b>								

**Annexure-III****Performance of female born**

S. No.	Name of the District	No. of daughters calved	Average age at first calving	Average lactation yield of daughters
<b>Total</b>				

**Annexure-IV****Performance of male born gone for semen production**

S. No.	Name of the District	No. of males gone for semen production
<b>Total</b>		