Animal Biomedical Waste Management Advisory

Version 1.0

By

Department of Animal Husbandry and Dairying

(Ministry of Fisheries, Animal Husbandry and Dairying)

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Definitions

"Authorization" means permission granted by the prescribed authority for the generation, collection, reception, storage, transportation, treatment, processing, disposal or any other form of handling of bio-medical waste in accordance with the rules and guidelines issued by the Central Government or Central Pollution Control Board or State Pollution Control Board as the case may be.

"Authorized person" means an occupier or operator authorized by the prescribed authority to generate, collect, receive, store, transport, treat, process, dispose or handle bio-medical waste in accordance with the rules and the guidelines issued by the Central Government or the Central Pollution Control Board or the State Pollution Control Board as the case may be.

"Biological" means any preparation made from organisms or micro-organisms or product of metabolism and biochemical reactions intended for use in the diagnosis, immunization or the treatment of human beings or animals or in research activities pertaining thereto.

"Bio-medical waste" means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or research activities pertaining thereto or in the production or testing of biological or in health camps.

"Bio-Medical Waste Treatment and Disposal Facility" means any facility wherein treatment, disposal of bio-medical waste or processes incidental to such treatment and disposal is carried out and includes common bio-medical waste treatment facilities.

“Handling” in relation to bio-medical waste includes the generation, sorting, segregation, collection, use, storage, packaging, loading, transportation, unloading, processing, treatment, destruction, conversion, or offering for sale, transfer, disposal of such waste

“Health care facility” means a place where diagnosis, treatment or immunization of animal/ livestock beings is provided irrespective of type and size of health treatment system, and research activity pertaining thereto. In pretext to these guidelines these health care facilities include District Veterinary Hospitals, Sub Divisional Hospitals, Community Health Centres.

“Management” includes all steps required to ensure that bio- medical waste is managed in such a manner as to protect health and environment against any adverse effects due to handling of such waste;

"Occupier" means a person having administrative control over the institution and the premises generating bio-medical waste, which includes a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood bank,

health care facility and clinical establishment, irrespective of their system of medicine and by whatever name they are called.

"Operator of a common bio-medical waste treatment facility" means a person who owns or controls a Common Bio-medical Waste Treatment Facility (CBWTF) for the collection, reception, storage, transport, treatment, disposal or any other form of handling of bio-medical waste.

“Prescribed authority” means the State Pollution Control Board in respect of State and Pollution Control Committee in respect of Union Territory.

“Point of Generation” means the location where wastes initially generate, accumulate

and is under the control of the operator of the waste-generating process.

“Storage” means the holding of bio medical waste for a temporary period at the end of

which the bio-medical waste is treated or disposed.

“Treatment” means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological characteristics or composition of any hazardous waste.

Introduction

Biomedical waste (BMW) generated by veterinary establishments, animal hospitals, diagnostic labs, and research facilities needs to be managed effectively to prevent health hazards, environmental pollution, and contamination.

If in case BMW is left unattended for appropriate collect, treatment and disposal, this may cause serious hazards to human & animal health and also ecosystem in the environment. BMW can be a potent source of infection to human and animals for diseases and increase the risk of spread of zoonotic diseases like Brucellosis, Anthrax, Rabies etc. On other side this may contaminate water, soil, air which is very harmful for the environment & ecosystem.

So far BMW related with animal husbandry sector and its harmful effects, the Ministry of Fisheries, Animal Husbandry and Dairying recognizes the importance of formulating an advisory towards adopting proper waste management practices to ensure animal health and public safety, in alignment with the Biomedical Waste Management Rules, 2016 and WHO Blue Book, 2014.

Scope

This advisory applies to all veterinary establishments, animal hospitals, research laboratories, clinics, slaughterhouses, organized dairy farms, and other facilities that generate animal biomedical waste. The focus is on ensuring the safe disposal of biomedical waste after segregation, collection, treatment if required.

Key Requirements

I. Segregation of Biomedical Waste: Animal biomedical waste must be segregated at the point of generation into categories defined by the Biomedical Waste Management Rules, 2016.

   Bio- medical waste generated from a healthcare facility is required to be segregated at the point of generation as per the colour coding stipulated **under Schedule-I of BMWM Rules, 2016**. Following activities to be followed to ensure proper waste segregation:

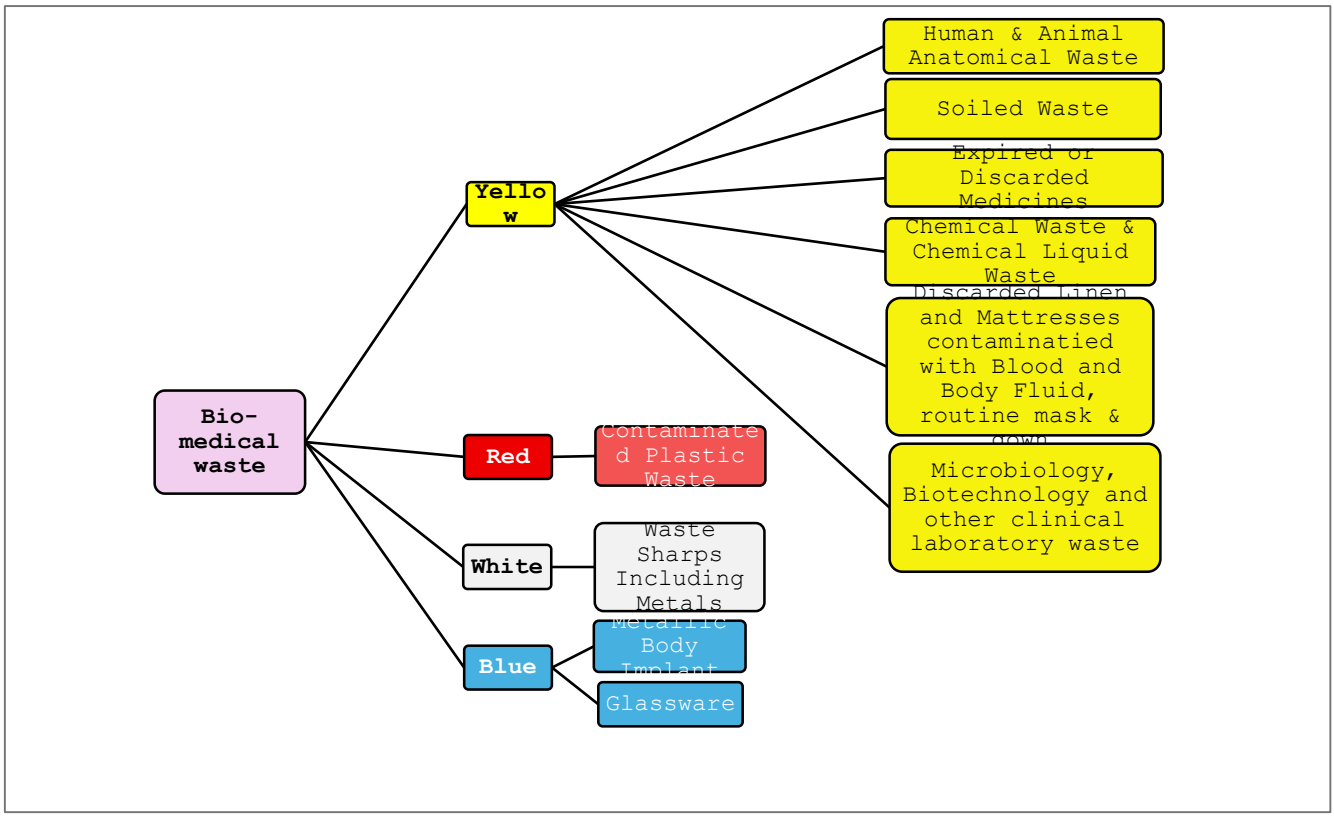
   - Waste must be segregated at the point of generation of source and not in later stages. As defined earlier too, “Point of Generation” means the location where wastes initially generate, accumulate and is under the control of doctor / nursing staff etc. who is providing treatment to the patient and in the process generating bio-medical waste.
   - Posters / placards for bio-medical waste segregation should be provided in all the wards as well as in waste storage area.
   - Adequate number of colour coded bins / containers and bags should be available at the point of generation of bio-medical waste.

- Colour coded plastic bags should be in line with the Plastic Waste Management Rules, 2016. Specifications for plastic bags and containers given at Annexure 1.
- Provide Personnel Protective Equipment to the bio-medical waste handling staff.

As per Schedule I of the Bio Medical Waste Management Rules, 2016 **following colour coding and type of container/bags is needed to be used by the HCFs** for segregation and collection of generated Bio Medical Waste from the facility.

II. Storage: **Bio Medical Waste Management Rules, 2016 categorises the bio-medical waste generated from the health care facility into four categories based on the segregation pathway and colour code. Storage for Biomedical Wates has been categorised mainly in four categories.** Biomedical waste should be stored in clearly labelled, color-coded containers to prevent cross-contamination.

- Use **yellow containers** for



i. **Animal anatomical** waste, body fluids, and contaminated items.

ii. **Soiled Waste Items** contaminated with blood, body fluids like dressings, plaster casts, cotton swabs and bags containing residual or discarded blood and blood components. Discarded or Expired Medicine

Pharmaceutical waste like antibiotics, cytotoxic drugs including all items contaminated with cytotoxic drugs along with glass or plastic ampoules, vials etc.

iii. **Chemical Waste:** Chemicals used in production of biological and used or discarded disinfectants

iv. **Chemical Liquid Waste:** Liquid waste generated due to use of chemicals in production of biological and used or discarded disinfectants, Silver X - ray film developing liquid, discarded Formalin, infected secretions, aspirated body fluids, liquid from laboratories and floor washings, cleaning, house - keeping and disinfecting activities etc.

v. Discarded linen, mattresses, beddings contaminated with blood or body fluid, routine mask & gown.

vi. Microbiology, Biotechnology and other clinical laboratory waste (Pre-treated) Microbiology, Biotechnology and other clinical laboratory waste: Blood bags, Laboratory cultures, stocks or specimens of microorganisms, live or attenuated vaccines, animal cell cultures used in research, industrial laboratories, production of biological, residual toxins, dishes and devices used for cultures.

- Use **red containers** for non-infectious materials like plastic and glass waste. Wastes generated from disposable items such as tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes without needles, fixed needle syringes with their needles cut, vaccutainers and gloves
- Use **blue containers** for sharps and black containers for general waste**.** Broken or discarded and contaminated glass including medicine vials and ampoules except those contaminated with cytotoxic wastes.
- Use **White Containers** for Waste Sharps including metals, Needles, syringes with fixed needles, needles from needle tip cutter or burner, scalpels, blades, or any other contaminated sharp object that may cause puncture and cuts. This includes both used, discarded and contaminated metal sharps

Storage areas must be secure, clean, and well-ventilated, with appropriate precautions to avoid leakage or contamination.

III. Treatment Methods: According to the WHO Blue Book, 2014, the following methods of treatment should be employed:

- **Incineration:** High-temperature incineration (800-1000°C) for the disposal of anatomical waste, pathological waste, and sharp objects.

- **Autoclaving:** Sterilization using high-pressure steam (at 121°C for 30 minutes) for items like surgical instruments, contaminated dressings, and certain pharmaceutical waste.
- **Chemical Disinfection:** Chemical treatment with disinfectants for handling blood, urine, or other bodily fluids to neutralize pathogens.
- **Microwave Treatment:** Suitable for general biomedical waste, this technology can be used where available and practical.

[1]For HCF having linkage with CBWTF

No treatment of waste is required to be carried out at veterinary hospital **except pre-treatment (sterilization) of Yellow (h) category waste (if applicable)** by autoclaving/ microwaving/ hydroclaving or sterilize as per methods prescribed in WHO Blue book 2014. Yellow category waste along with pre-treated waste should be stored in central storage point and must be handed over to CBWTF.

For HCF having own treatment and Disposal facility

Animal anatomical waste should be disposed through Plasma Pyrolysis unit or twin chambered compact incinerator with 2 seconds retention time in secondary combustion chamber and adequate air pollution control devices to comply with revised emission norms prescribed under BMW Management Rules, 2016. Animal anatomical waste can also be disposed in captive deep burial pits only in case of those veterinary hospitals located in rural or remote isolated place. Use of deep burial pit should be as authorised by SPCB/PCC.

The detailed information on Carcass management and disposal including disinfection is also available in Guideline on Disposal of Animal Carcass and Disinfection formulated by the Department of Animals Husbandry and Dairying (DAHD).

IV. Transportation: Safe transportation of biomedical waste must be ensured using vehicles that are:

- Clearly marked with appropriate labels indicating the nature of the waste.
- Equipped to prevent spills and cross-contamination.

V. Training & Awareness: All staff handling biomedical waste must be trained in proper segregation, storage, and disposal techniques. Training should cover:

- Health risks of improper waste handling.
- Proper use of personal protective equipment (PPE).

[1] As mentioned in page no 15 of Guidelines for Management of Healthcare Waste as per Biomedical Waste Management Rules, 2016

- Emergency procedures in case of spills or accidents.

VI. Monitoring and Record Keeping: Regular monitoring should be conducted to ensure compliance with the waste management practices outlined. Establishments should maintain records of:

- Types and quantities of biomedical waste generated.
- Dates of waste collection, treatment, and disposal.
- Training schedules and staff attendance.
- Maintenance and calibration of treatment equipment.

Monitoring Matrix for Animal Biomedical Waste Management

Monitoring Parameter	Frequency	Responsible Authority	Indicators/Action Required
Segregation of Waste	Daily	In charge of Veterinary Hospitals, Dispensaries & MVU	• Ensure correct segregation of waste into the designated color-coded containers. • Non-compliance leads to re-segregation and additional training.
Pretreatment of Biomedical Waste	Daily/ Weekly	In charge of Veterinary Hospitals, Dispensaries & MVU (in Liaison with local municipal/panchayat and pollution authority)	• Ensure that appropriate methods (incineration, autoclaving, etc.) are used per the waste category.
Storage Conditions	Weekly (However daily handing over of the material maybe encouraged in Liaison with Municipal/Panchayat Authorities)	In charge of Veterinary Hospitals, Dispensaries & MVU (in Liaison with local municipal/panchayat and pollution authority)	• Verify proper labelling, secure storage, and absence of leaks or contamination. • Ensure storage complies with safety and hygiene standards.
Waste Collection & Disposal	Monthly (However daily/weekly disposal of the material maybe encouraged in Liaison with Municipal/Panchayat Authorities)	In charge of Veterinary Hospitals, Dispensaries & MVU (in Liaison with local municipal/panchayat and pollution authority)	• Check the timeliness of waste collection. • Ensure proper documentation (e.g., collection dates, quantities). • Record any delays or improper disposal methods.

Monitoring Parameter	Frequency	Responsible Authority	Indicators/Action Required
Treatment of Biomedical Waste	Monthly	local municipal/panchayat and pollution authority (Veterinary authority will only do pre-treatment and handover the material to local Municipal/Panchayat authorities for further treatment and disposal)	• Ensure that appropriate methods (incineration, autoclaving, etc.) are used per the waste category. • Verify temperature and time for sterilization/incineration procedures.
Employee Training & Awareness	Quarterly	In charge of Veterinary Hospitals, Dispensaries & MVU ensures that they and staff are sensitised (in Liaison with local municipal/panchayat and pollution authority)	• Verify staff training records. • Ensure all employees handling waste are trained annually in segregation, handling, and emergency procedures.
Health and Safety Compliance	Bi-annual	In charge of Veterinary Hospitals, Dispensaries & MVU ensure that health checkups and protective gears are available and in place at all times (in Liaison with local municipal/panchayat and pollution authority)	• Check for PPE usage and compliance with safety standards. • Monitor for occupational health risks and record any incidents of exposure to biomedical waste.
Compliance with Regulatory Standards	Annually	In charge of Veterinary Hospitals, Dispensaries & MVU should ensure all compliances (in Liaison with local municipal/panchayat and pollution authority)	• Audit facility for adherence to BMW Rules, 2016 and WHO guidelines. • Ensure proper disposal certification from licensed disposal units.
Waste Generation Reports	Monthly	In charge of Veterinary Hospitals, Dispensaries & MVU for their respective	• Maintain records on the amount of biomedical waste generated, treated, and disposed of.

Monitoring Parameter	Frequency	Responsible Authority	Indicators/Action Required
		works and authorization.	• Ensure reports are submitted to regulatory authorities (as required).

Conclusion

Effective management of animal biomedical waste is essential to protect human health, the environment, and animal welfare. By adhering to the Biomedical Waste Management Rules, 2016 and WHO guidelines, we can ensure safe practices for the treatment and disposal of animal-related biomedical waste. The Department of Animal Husbandry and Dairying is committed to supporting veterinary establishments and stakeholders in achieving these standards through this advisory.

References

Guidelines for Management of Healthcare Waste as per Biomedical Waste Management Rules, 2016

Safe management of wastes from health-care activities, WHO Blue Book, 2014