“Management of Waste from Dairy Farms”

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Introduction

- Dairy farms are the establishment which house milching animals to produce milk for distribution and send to milk processing plants.

- CPCB has formulated the “Guidelines for Environmental Management of Dairy farms and Gaushalas”, highlighting the Solid Wastes Management, Wastewater Management, Air Quality Management, Siting Policy and Regulatory/Monitoring Mechanism.

- The Guidelines have been circulated to all SPCBs/PCCs for implementation in the month of July.
Inventory of Dairy Farms

Dairy colonies/clusters = 2793
The total amount of dung generated/produced by animals in Dairy Farms is 2,60,922 tons/day

26 States/UTs: Dairy Farms: 2,73,437 and Animals 21,34,018
Environmental Issues in Dairy Farms

- Discharges of dung and urinal wastewater.
- The poor handling of dung and wastewater causes odour problem.
- A Bovine animal, on an average, weigh 400 kg and discharges 15-20 kg/day of dung and 15-20 litres/day of urine.
- Cattle dung is discharged along with wastewater into the drains leads to Clogging and water pollution in rivers.
- Breeding ground for mosquitoes: Health hazards and odour nuisance.
- Housekeeping
General Characteristics of Wastewater Discharged from Dairy Farms based on the CPCB Study

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Dairy Farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>6.9 – 7.6</td>
</tr>
<tr>
<td>COD (mg/l)</td>
<td>3,800 – 14,200</td>
</tr>
<tr>
<td>BOD (mg/l)</td>
<td>1,100 – 2,900</td>
</tr>
<tr>
<td>TSS (mg/l)</td>
<td>3,800 – 12,900</td>
</tr>
</tbody>
</table>
Current Scenario of Dairy Farms in India: Indicating need for CPCB Guidelines

**Picture-1:** Bio-medical waste handling in Goyla Dairy Farm

**Picture-2:** Cattle dung discharged into drain and on road from Kakrola Dairy Farm

**Picture-3:** Floor Cleaning. Wastewater discharged in drain from Shahbad Dairy Farm

**Picture-4:** Cattle dung discharged into drain from Goyla Dairy Farm
Current Scenario of Dairy Farms in India: Indicating need for CPCB Guidelines

**Picture-5:** Poor housekeeping practice in Chiranjiv Vihar Dairy Farm

**Picture-6:** Good housekeeping practice in Nangli Dairy Farm

**Picture-7:** Vermicomposting for handling of dung generated from Dairy Farm

**Picture-8:** Biogas generation for handling of dung generated from Dairy Farm
Salient Features of “Guidelines for Environmental Management of Dairy Farms and Gaushalas”

1. Solid Waste Management

- The following methods for disposal/ utilisation of solid wastes (dung) may be adopted:
  - Composting/Vermicomposting
  - Biogas/Compressed biogas (CBG) production (anaerobic digestion)
  - Manufacture of dung wood to be used as fuel

- Collection of dung from the floor of the shed at regular interval.
- Sanitization and disinfection, e.g. by sprinkling crushed lime, regularly
- Dispose the domestic hazardous wastes (vaccines, vails, medicines, syringes, etc.): “Solid Waste Management Rules, 2016”
2. Wastewater Management

- Take necessary steps for the judicious use of water for drinking & bathing of cattles and other services: Not exceed 150 litres/day/cattle
- Wastewater being discharged, is adequately treated so as to meet the standards

3. Air Quality Management

- The animal housing should be adequately ventilated
- Follow good housekeeping practices
- The floor, feeding, water and air spaces available for each animal: BIS 12237:1987 & 11799:2005
- Improve/modify the quality and dosage of feed/forage/supplements in order to reduce enteric methane generations from livestock: Obtain ration advisory from any of the agricultural institutes/departments
- Plant trees or develop green belts
4. Siting Policy and Regulatory/Monitoring Mechanism

- Located outside city/village boundaries, at least 200 meters away from residential dwellings and 500 meters away from hospitals & schools.
- Inter-se distance between two establishments: At least 5 meters for ventilation

- Training and consultation to the Gram Panchayat by SPCBs/PCCs
- Practical trainings on environment/waste management & treatment technologies, scientific feeding for enteric methane reduction, waste to wealth management programme, etc. to dairy workers/entrepreneurs by the local bodies/SPCBs/PCCs on regular interval
Thank You