ENVIRONMENTAL GUIDELINES FOR POULTRY FARM

1.0

1.1 Fencing and Green Belt Development

1. The poultry farm should raise green belt all around the farm with minimum of two rows spaced apart of not more than 3 m.
2. The poultry farm should be fenced with barbed wire / linked mesh upto a height of 1.5 m with appropriately secured entrance and outlet.

2.0 Air Emission (Includes gaseous emission, Odour and Dust)

2.1 Minimization of odour / gaseous pollution problem

- Ensure proper ventilation and free flow of air over manure collection points to keep it dry
- Protect manure from unwanted pests/insects
- Protect manure from run off water and cover it to avoid dust and odours in storage pits
- Design, construct, operate and maintain waste storage facilities to contain all manure, litter and washings
- Collect carcasses promptly on regular basis and dispose them appropriately without damaging the environment.

2.2 Feed Mills

1. The feed mill and godown should be located on a well elevated ground preferably near the entrance to the farm and isolated from other poultry sheds.
2. It should have a separate entrance and exit without crisscrossing the internal poultry farm roads.
3. Provision for vehicle tyre dip should be made available at the entrance control gate
4. Floor of the feed mill and godown should be concrete, damp proof, rodent/vermin proof and raised above the ground level by a minimum of 2 feet.

5. Should have adequate fire and other accident safety provisions.
6. All feed ingredients should be stored on pallets or platforms to facilitate easy detection of leakage and to prevent absorption of moisture from the ground.
7. Dust collector system should be installed in the feed mill .
8. All the workers working in the feed mill should be provided with dust masks.
9. Avoid pest infestation of stored feed ingredients by frequent inspection and following prompt interventions.
10. Never store pesticides and other poisonous materials in feed plants or feed making premises.
11. Provide exclusive storage facility within feed plant for feed additives like vitamins, minerals etc.,
12. Always store finished feed in covered containers and try to deliver to sheds for distribution to birds in specially made closed delivery trucks avoiding baggage and its reuse.
13. Never store finished feed in sheds for more than the current days requirement.
14. Prevent interaction of feeds with wild birds, rodents, pests, flies etc; as a measure of food safety and prevention of spread of diseases.
15. Avoid spillages to limit wastage and discourage habitation for pests and rodents
16. Observe sanitation and cleanliness as a routine to ensure quality and safety of feed grains

3. Management of solid wastes (Solis Waste contains Dead Birds, Manure and Hachery Debris)

General:

- Place primary importance to minimize waste generation in regular farm management schedule.
- Properly collect, sort, treat, transport and utilize the solid wastes
- Always balance land application of manure to the nutritional requirements of soil and crop

- Keep manure dry and avoid wet spots/patches
- Store manure properly by following appropriate storage technologies like composting
- Reduce mortalities on farm by proper animal care and disease prevention program
- The products from the rendering plant can be used a pet food.
- No open burning or indiscriminate dumping of any dead birds / feathers / offal's, unused materials like litter / empty gunnies / containers etc. should be adopted within or outside the farm premises
- Use reliable options for collection, storage, transport and disposal of dead birds

A

Dead Birds Disposal

a) Burial

1. The dead birds arising from day to day farm activity should be separated from other live birds promptly and should be stored in closed containers \ disposed off within 24 hours by following any of the appropriate disposal methods.
2. The dead bird burial pit should be of 3 to 4 m in depth and 0.8 to 1.2 m diameter and located above minimum of 3 m from the ground water table.
3. The dead bird burial pit should be provided with a vermin/fly proof cover made up of wooden / metal / concrete having a central operable lid of proper size for day to day dropping of carcasses.
4. When the pit is full, a compacted soil cover of 0.5 m should be provided with the top of the covered soil well above the ground level.
5. The distance between any two burial pits should not be less than 1 m.

b) Composting

1. The composting facility should not be located within 300 m from the nearest dwelling and 100 m from any well or water course.
2. The capacity of the composting facility must be sufficient to handle the average mortalities on the farm.
3. The roof of the composting facility should be permanent with bottom concreted.
4. The composting facility should be secured with link mesh all around raised to a height of 1.5 m above the ground level to avoid the predation by straw dogs etc.
5. A proper mixture of smaller and larger particle sizes to obtain an optimum air exchange within the mixture and buildup of temperature.
6. Moisture content of the composting pile should be approximately 60%. More than this may result in odor
7. problems and less than this will reduce the efficiency of the composting process.
8. Carbon and nitrogen are vital nutrients for the growth and reproduction of bacteria and fungi. The carbon-to-nitrogen ratio must be in the range of 20:1 and 25:1 for proper composting. This is obtained by carefully balancing the dead bird and carbon sources.
9. The optimum temperature for composting is 54 to 66°C which pasteurizes the compost. If temperature falls below 49°C after a week or so, the material should be moved to the secondary stage unit. To facilitate the easy transfer of the first stage material to the secondary stage, the proper designing of the primary stage (first stage) facility is desirable as illustrated in figure 5.5. Failure to do so will result into poor compost. The temperature in the secondary stage unit will begin to raise as beneficial bacterial activity begins and will peak in 5 to 10 days.

c) Incineration

1. The incinerator should be located in down wind direction to the poultry houses and populated areas.

2. The incinerator capacity should be of sufficient size such that no un-burnt carcasses are left in a day's operation.
3. The guide lines and standards prescribed under Bio-Medical Waste (Management and Handling) Rules, 1998 should be followed for erection and operation of the incinerator.

B

Manure Storage and Management Storage

1. The litter / manure storage dumps should be minimum 2 m above the water table and of sufficient size based on the type and number of birds handled. It's base should be constructed with stone slabs or concrete or impermeable compacted clay.
2. The litter / manure storage dumps should have a 25 m buffer strip all around to keep out of wet areas/drainage discharges.
3. Keep manure dry and avoid wet spots/patches
4. The dry manure dump should be covered with permanent roof or with plastic / similar material to prevent air emissions and the precipitation falling on it.
5. Store manure properly by following appropriate storage technologies like composting.

Composting of Manure:

The composting process of poultry manure consists:

- Properly mixing the waste with a carbon rich material (e.g., paddy straw / husk, wood shavings) in pits or in windrows. Carbon to nitrogen ratios of 20-25:1 are usually recommended. Pure manure can also be composted if all factors are carefully monitored.
- Addition of air by periodic stirring
- Proper balancing of moisture levels (35 to 50% moisture).
- Temperature monitoring to determine if composting conditions have occurred.

6. Efforts may be made to Utilize Manure for Biogas Generation

C Hachery Waste Management:

- Efforts may be made in converting the shells to animal feed to supply as a source of calcium, especially for poultry feeds.
- Extrusion with soybean meal can be used to make a shell / hatchery meal.
- Un-hatched eggs should be disposed of by composting or by rendering at a byproduct plant. It can also be processed by extrusion with soybean meal to be used as hatchery meal in pet food manufacturing.

4. Waste water Discharge

The waste water generated from the cleaning operations (after each batch removal) should be collected in appropriate holding tank and put to use in the green belt.

➢ **Process for treatment and disposal of effluent**

- Proper drainage / outlet for collection and discharge should be provided for storm runoff / discharges from the farm.
- Improve drainage, reduce standing water and water ditches to control mosquitoes and flies
- Reduce water use and spills from drinking devices by preventing overflow or leakages and using calibrated, well-maintained self-watering devices;
- Installation of vegetative filters (reed filters) and surface water diversions to direct clean run offs around areas containing wastes will help in decreasing spread of pollutants
- Use of pressure pumps, hot water or steam in cleaning activities instead of cold water and plain water scrubs can tremendously improve sanitation and reduce the quantities of wash water effluents considerably

- No obstruction should be created for any water course within the farm or outside the farm boundary.
- Implement buffer zones to surface water bodies, as appropriate to local conditions and requirements, and avoid land spreading of manure within these areas.

5. Good House Keeping Practices in Poultry Farms

The following good Management Practices should be practiced in Poultry Farms

a) **Control of Flies in Poultry Farms:** An integrated approach that ensures the proper treatment and disposal of manure, correct ventilation of sheds, control of temperature, good sanitation, swift repairs of leaks, avoidance of feed spills, prompt removal of broken eggs and dead birds will all help control of flies in the poultry farms.

b) **Control of Rodents:** Monitoring should be undertaken on regular basis after recognizing the rodent problem. The methods for the control of rodents may include : i) Exclusion ii)Trapping iii)Glue boards iv) Slow killing toxic baits v)Rapid killing toxic baits and vi) Tracking powder

- The loading and unloading operations can be limited to day time
- Should have adequate fire and other accident safety provisions.

c) **Efficient Feed Management Practices**

- Avoid exposure of feed and feed ingredients to rain, moisture, flies and pests
- Ensure proper storage of feed and its transport
- Avoid reuse of used feed bags
- Keep feeder equipment always clean and tidy
- Dispose properly the waste feed with due consideration to bio-security and environment
- Properly balance the feed for meeting the precise nutritional requirements

- Avoid overages/excess nutrients. Never store finished feed in sheds for more than the current days requirement
- Match feed formulation to the specific nutritional requirements of birds like growth, production, breeding etc.
- Balance properly the energy: protein, calcium: phosphorous, Lysine: Methionine, Manganese: Zinc: Selenium ratios in the diet
- Use enzymes, amino acids and gut modifiers etc. for enhancing feed utilization and nutrient adsorption
- Ensure proper balancing and mixing of trace elements like vitamins, trace minerals, amino acids and other feed additives
- Accurate weighing and proper distribution of feed to avoid wastage
- Always use quality, uncontaminated feed material
- Implement a comprehensive nutrient management plan for the entire farm
- Maintain records for feed issues and consumption of water and feed on daily basis
- Provide good quality drinking water
- Deliver safe water to birds without exposure to contaminants – nipple system is best compared to open dispenses.
- Avoid spillage or leakage of water on the farm
- Prevent interaction of feeds with wild birds, rodents, pests, flies etc; as a measure of food safety and prevention of spread of diseases.
- Observe sanitation and cleanliness as a routine to ensure quality and safety of feed grains.

d) Good Pest Management Practices

- Design and construct all poultry structures to keep out pests
- Implement integrated pest control and management to control pests and limit pesticide use on farm

- Use predators to control pests
- If pesticides are used follow the correct doses, methods of application and proper disposal of used containers
- Consider rotating the generic contents of pesticide to avoid build up of resistance in the target pest
- Avoid use of pesticides that fall under Hazardous class
- Always follow label guidelines for dose application and safety precautions while mixing, transfer and application of pesticides should be undertaken by trained persons in well ventilated and well lit areas.
- Never store pesticides and other poisonous materials in feed plants or feed making premises.
- Avoid contamination of feed, water and other food material including their equipment with pesticides.
- Store pesticides always in their original container at exclusively dedicated place and kept under lock and key
- Properly evaluate the effectiveness of pesticide and its potential environmental impacts before application
- Never use pesticide containers for any other use and should be properly disposed to an engineered land fill facility
- Avoid pest infestation of stored feed ingredients by frequent inspection and following prompt interventions.

6. Administrative mechanism

In the absence of any specific registration procedure in the country to enumerate the poultry farms, their size and nature of operations, the following are recommended:

- The hatcheries of any size which are performing this exclusive operation, feed mills of any capacity and the commercial poultry farms which are handling more than 5,000 birds at a given time on any single location need to be got registered with local bodies.

- The poultry farms which are handling 1,00,000 or more birds at a given time in single location need to approach State Pollution Control Board to obtain necessary Consent for Operation under Water Act, 1976.

Siting Criteria (For New Poultry Farms)

1. The poultry farm should not be located within
   - 500 m from residential zone
   - 200 m from major water course like River, Lake and Canals
   - 500 m from any major drinking water reservoir on catchment side.
   - 100 m from any drinking water source like wells, summer storage tanks, other tanks
   - 500 m from nearby poultry, dairy or another livestock enterprises or industry
   - 150-200 m from National Highway (NH)
   - 100 m from State Highway (SH)
   - 10-15 m from rural roads/internal roads/village pagdandis

2. The poultry sheds should not be located within
   - 10 m from farm boundary
3. The poultry sheds should be positioned
   - on East to West direction
   - at least 2 m above the water table
   - at least 0.5 m above ground level