EXPERIMENT 10 SAFE DISPOSAL OF SICK/DEAD BIRDS AND POULTRY WASTE

Structure

10.1 INTRODUCTION

Scientific disposal of dead/sick birds and different poultry waste is important because:

- The carcasses and hatchery wastes attract dogs, cats, vultures, insects and flies. Their free movements transmit disease producing agents from one place to another spreading the disease.
- The disease agents present in carcasses and other poultry wastes are carried through rain water contaminating other water sources.
- Some of the diseases causing agents are carried through air from one place to another.
- The surroundings are contaminated with feathers and bones resulting in soil pollution.
- On decomposition, the carcass may emit foul smell and cause air pollution.

Objectives

After performing this experiment, you will be able to:

- compare different methods of disposal of dead birds and poultry waste; and
- select a suitable method of disposal of dead birds and poultry waste in a given farm situation.

10.2 EXPERIMENT

10.2.1 Principle

Dead birds and poultry waste have to be disposed by employing methods that are efficient, convenient, economical and least polluting the environment.

10.2.2 Requirements

- Different facilities like incinerator, manure pits etc.
- Dead/sick birds, manure, hatchery waste etc. to be disposed off.

10.2.3 Procedure

The various methods are described below:

(i) Burying

1) Suitable for small farmers who cannot afford construction of an incinerator.

2) The best and easiest way is to dig a deep narrow trench.

3) Bury the dead birds deeply so that stray dogs cannot dig out the carcasses again.

4) Deposit each day's mortality and cover until the trench is filled.

(ii) Pit Disposal

1) The pit disposal is an effective and convenient method for disposal of poultry waste and dead birds, which is within the means of all poultry farmers.

2) The pit should be about 150 feet away from the poultry houses and the water source of the farm. It should be away from brooding and growing facility.

3) The pit size would depend upon flock size and poultry waste generation. A pit size of 6'× 6'× 8' is most practical.

4) A concrete roof with 1'×1'×3' dropping tube in the centre should be provided to drop the dead birds.

5) A tight fitting lid should be made for upper end of the dropping tube to prevent entry of flies.

6) The tube should extend 2' above the ground. The waste inside is destroyed by process of slow decaying.

7) Eventually, the pit becomes full and should be sealed by filling the dropping tube by soil. It is better to have two such pits so that shifting is done to another pit when one is full.

(iii) Incineration

Incineration is the burning of carcasses and poultry waste in a furnace called 'Incinerator' (Fig. 10.1). Incineration is the preferred method of disposal, provided the carcasses are completely burnt in this process. Electricity, oil and fire wood are used as fuel. Designs of incinerators depend upon the fuel used for an operation. Electrical or oil-fired incineration is the best available technology for efficient and immediate disposal of carcasses and poultry waste. However, this method is suitable for large-scale commercial poultry farmers.

Fig. 10.1: Incinerator

(iv) Septic Tank Disposal

This method of disposal consists of digesting the carcasses and waste products in the electrically heated septic tank by the action of mesophilic bacteria. These bacteria multiply best at 90-100°F. Hence, heat is applied at 100°F to maintain this temperature. Two weeks time is needed for destruction of carcass except bones. The bacterial action and speed of decomposition can be accelerated by adding lime and hot water at intervals. Roughly, a tank of 2,000 litres capacity is necessary for a flock of 10,000 birds. This method also is not in common practice due to the cost involved.

(v) Rendering

In this method, the dead birds and poultry waste are converted into fertilizers and other products. In some large farms, rendering plants (Fig. 10.2) are available for industrial utilization of dead birds. These plants collect freshly dead birds. The fat is being utilized in the manufacturing of soaps and the bones are used for manufacturing of fertilizers and bone meal. One of the major disadvantages with this method is the spread of pathogenic microorganisms during routine pickup and transportation to a rendering facility. This method requires a specialized rendering plant and hence, not practiced by most farmers.

Fig. 10.2: Rendering Plant

(vi) Composting

Composting is a controlled, natural process in which beneficial organisms (bacteria and fungi) reduce and transform organic wastes into a useful end-product called compost. It requires two type of composting bin-primary and secondary.

1) A one feet layer of used poultry litter is first placed on the concrete floor of the primary bin.

2) A layer of straw is added to help in aeration and supply an adequate source of carbon.

3) Then a single layer of carcasses is placed into the bin and water is added to maintain moisture.

4) Finally, the layer of carcasses is covered with manure for subsequent layering.

5) Thereafter, successive layers of litter, straw, carcass and water are layered into the primary bin. Once full, a final cover of litter is placed over the carcasses.

6) Temperature of the compost increases rapidly, as bacterial action progresses, rising to 60-70°C within 10 days. The increase in temperature has two important effects - it helps in decomposition and also kills microorganisms.

7) Temperature begins to decrease in the primary bin 14 to 21 days later.

8) At this point, material is moved to the secondary bin, aerated in the process, and allowed to proceed through a second temperature rise.

9) After the second heating cycle, composted material can be safely stored, until used for land application.

10.2.4 Observations

i) Record the size of pit for burial of dead birds.

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ii) Indicate temperature for composting.

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10.2.5 Results

Give your opinion on disposal of dead birds.

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10.3 PRECAUTIONS

- Take every precaution to follow the procedure given in each of the above methods; otherwise it will do more harm than the benefit.