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REVIEW ABOUT
HATCHERY DISINFECTION
& BROILER HOUSE PREPARATION

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Hatchery disinfection

Definition:

Application of germicides to kill all remaining microorganisms which may cause hatchability problems or infect newly hatched chicks.

Disinfectant:

Chemicals used to kill microorganisms such as bacteria, viruses and fungi.

N.B:

- The main source of contamination in hatchery is the egg.
- The other sources are personnel, water, and air.

Cleaning:

Definition:

Physical removal of dirt, hatching wastes, organic matter and dust which protect microorganisms.

- Cleaning must be done before starting disinfection, as cleaning remove 80% of microorganisms.

Cleaning steps:

A) Dry cleaning.

Using broom, brushes, shovel and compressed dry air to remove dust and hatchery wastes.

B) Wet cleaning.

Using water and detergent to remove remaining organic matter and greasy and sticky materials.

-cleaning is more effective by using:

.warm water

.steamer

.brushing

.detergent

*After complete cleaning process and rinsing with clean water, start using disinfectant.

Disinfection

Special consideration for disinfection:

-cleaning quality

-water hardness and temperature

-stability of disinfectant

-using of correct dilution with in correct contact time

-pH of disinfectant

Types of disinfectants:

- Halogens (iodophors and chlorines, Dettol®)
- Alcohols
- Oxidizing agents (hydrogen-peroxide, hyperox®, virkon®)
- Phenols (fenix®, Prophyl 75®)
- Aldehydes (glutheraldehyde – TH4®, formalin)
- Quaternary ammonium compound (Timsen® Medisep®)

A Broad Look at Disinfectants

Type	Examples	Uses
Alcohols	Rubbing Alcohol, Isopropyl, Ethanol	Small objects, hands
Hypochlorite	Chlorox, Chloramine-T, Halazone	Water, Clean surfaces
Iodophors	Betadine, Iofec, Isodyne, Tamed Iodine, Weladol	Water, Hands, Equipment, Walls
QAC (Quaternary Ammonia Compounds)	Roccal, Germex, Hi-Lethol, San-Q-Fec, Warden, Zephiran	Hatcheries, with some soaps
Phenolic	Lysol, Pine-Sol, Cresi-400, Enviren, Tek-Trol	Hatcheries, Equipment, Footbaths
Aldehyde	Formaldehyde, Glutaraldehyde	Fumigation, clean surfaces
Oxidizer	Hydrogen Peroxide, Peracetic Acid	Clean surfaces

Steps of hatchery disinfection:

1-Building and equipment sanitation:

- Washing and disinfection of equipment are a critical component of hatchery.
- All debris must be removed by sweeping, vacuuming, or by spraying water.
- A high pressure sprayer can be used, but hand scrubbing will be required if organic material remains or if the equipment being cleaned should not be exposed to a high pressure flow of Water.
- A thorough cleaning of the area (setters, hatcher, floors, chick-go-rounds, vaccinators, etc.) is essential before a disinfectant can be applied.
- Use high pressure water to clean surface soils from floors ceiling and walls.

2-setter sanitation:

- When setters are emptied, a thorough cleaning and disinfection are required. Like for any other areas, all debris must be removed as part of the cleaning process.
- Multi-stage setters should be fogged each time new eggs are set or transferred.

3-Candling and transfer area:

- After every egg transfer Remove all dust and debris and dispose, Scrub and wash all wall and floor surfaces with a detergent and Leave to dry.

4-Hatcher sanitation:

***The hatcher is the main source of organic contamination in the hatchery because of:**

- a- Accumulation of egg shells, unhatched eggs, dead chicks and droppings.**
- b- Conditions in the hatcher (temperature and humidity).**

***steps:**

- Strip out the equipment.**
- Remove all debris.**
- Apply water and detergent or foaming solution before scrubbing all parts of the Hatcher (walls, floor, and ceiling).**
- Pressure wash.**
- Rinse thoroughly.**
- Remove excess water and reposition the equipment.**
- Apply a disinfectant.**
- Warm up the hatcher to help dry the interior.**
- Make sure that the outside of the hatcher is also cleaned.**

5-Water line sanitation:

- Dirty water lines may help transmit disease agents. Therefore, waterline sanitation is Important.**
- Chlorine is effective as a disinfectant at 3 to 10 ppm and iodophors at 12.5 to 25 ppm.**

Poultry house preparation

After cleaning and disinfection of poultry house litter and all disinfected equipment should be placed 3days before chicks arrival.

Brooding basis:

1-litter.

It acts as insulation for baby chicks, litter thickness vary according to:

-seasonal temperature (5cm in summer, 10cm in winter)

-density of flock.

-ventilation.

-type of water system.

2-temperature.

Floor temperature must not exceed 32C.

3-humidity.

Relative humidity is 50-65%.

4-ventillation.

Summer: 7.5cu/kg bwt, winter: 11cu/kg bwt.

5-water.

Must provide chicks continuous source of clean water.

Water temperature 25-28C.

6-feed.

Must be available for chicks just at arrival, check crop after 12-24 hours to be sure that chicks are feeding well.

Chicks feed ad libitum to stimulate appetite.

7-light.

Light is continuous for 3-5 days with Light intensity 60-100lux to encourage feed& water consumption.

Before Chick Arrival

- 1. Clean and disinfect the poultry house and equipment (about two weeks ahead).**
- 2. Cover the dry floor with litter (3-4 inches of shavings, sawdust, rice hulls).**
- 3. Prepare and set up the brooder guard (18 inches high).**
- 4. Place feeders and waterers in a circle around the brooder.**
- 5. Operate the brooder for at least 24 hours before chick arrival.**
The temperature should be set at 92-95 F, and the temperature should be reduced 5 degrees each week until the chicks are three to four weeks old, or use one 125 watt bulb per 25 chicks.
- 6. Fill the feeders and waterers a few hours before the chicks arrival.**

References

- 1) <http://www.aces.edu/poultryventilation/documents/Nwsltr-80SevenBasicsofBetterBrooding.pdf>.
- 2) <file:///C:/Users/Backup/Downloads/broilermanagementdavidswygood18feb08-170402233554.pdf>.
- 3) *Hubbard_broiler_management_guide.*
- 4) *Cleaning & Disinfection of Poultry Farm Yoni Segal FAO Consultant yonisegal@fao.org.*
- 5) *Theresia K. Lavergne, Ph.D., P.A.S., Assistant Professor, Poultry Keith A. Fontenot, County Agent.*