MAINTENANCE OF SLAUGHTER HOUSE AND THEIR SANITATION

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INTRODUCTION

- The contamination in slaughter house is most carried by animals.
- In the slaughter house bacteria spread as a result of contact with personnel,clothing, equipment and surfaces.
- Besides above mentioned factors, abattoir hygiene will depend on its location, layout, construction, equipment, awareness among employees and facilities as well as routine of cleaning operations.
- Sanitation is not only important from public health point of view but it also enhances the shelf life of the product, promotes consumer acceptance and increase the efficiency of workers.

AGENTS USED IN SANITATION

1. **Water:** general solvent. It wets the surfaces and floats away loose debris and dirt. It used in cleaning should be soft, otherwise dissolved salts may cause ‘water spotting’. Hot water (80-90°C) and steam alone or in combination can be used for cleaning utensils, food contact surfaces and small equipment.
2. **Detergents or surface active agents:** they act by reducing the surface tension, thereby lowering the amount of mechanical energy required for cleaning. It is a cleaning substance which acting in combination with water can remove debris or dirt from surfaces.

There are mainly two categories of detergents:

1. **Soapy detergents:** prepared by heating animal or vegetable fat with caustic soda.
2. **Soap less detergents:** prepared by action of trioxide on mineral oil.

Detergents can also be classified into three main groups depending on their ability to produce negative, positive, nil or both types of ions(depending on the pH) in the solution.

a) Anionic (e.g. soap),

b) cationic,

c) non-ionic or amphoteric detergents

Anionic and non-ionic detergents in the ratio of 2:1 are most suitable for meat industry.

Chelating agents such as EDTA are used to sequester or lock up calcium and magnesium ions.

detergents have also been classified as:

1. Inorganic detergents, e.g. carbonates, phosphates, sulphates, sulphonates of sodium or potassium.
2. Organic detergents e.g. soaps; synthetic or lather producing material.

Formulation of a general purpose liquid detergent

phosphoric acid : 35%

surfactant : 1%

water : 64%

Formulation of a general purpose powder detergent

sodium metasilicate : 5%

sodium carbonate : 30%

sodium tripolyphosphate : 30%

alkyl aryl sulphonate : 5%

SANITATION FACILITIES

- Water points, hoses, sterilizers for hand tools and cleaning equipment must be provided in sufficient numbers. Where possible sterilizers should be supplied with hot water instead of chemical disinfectants.
- Environmental hygiene and its implementation will depend on the area where the slaughter house/ meat plant is situated
- **Main principles of environmental hygiene will consist of:**
- Proper fencing (public, dogs,)
- Pest control(rodents, insects)
- Liquid and solid waste disposal

Sanitation In Abattoirs And Meat Processing Plants

carried out by adopting a six step cleaning process:

1. **Physically pick up** all the waste material from floor and equipment.
2. **Dry sweep** the floor to remove all the particles of meat, fat, dung, scraps.
3. **Pre- rinse** the floor and equipment with water (50°C).
4. **Wash with appropriate detergent** at high pressure.
5. **Rinse again** with hot water.
6. Apply appropriate sanitizer.

Sanitizers or Disinfectants

These compounds decrease the number of microorganisms to a level which is generally considered as safe.

The sanitizing agents of common use in meat industry can be classified into four groups:

1. Halogens
2. Quaternary ammonium compounds
3. Amphoteric compounds
4. Detergent- sanitizers

Properties of Good Sanitizing Agents

- It should be capable of rapidly killing microorganisms.
- It should be effective against gram positive and gram negative bacteria as well as majority of spores.
- It should be readily soluble in water.
- It should not be toxic.
- It should not have an offensive odor.
- It should be economic to use.
- It should be stable during long and short term storage in concentrated and dilute forms.

Automated Cleaning Systems

- Central Cleaning System(ccs): suitable for abattoir and meat processing plant.
- Cleaning-in-place (cip): used in liquid food industry but has limited application in meat industry. It can be used to clean internal surfaces of equipment such as large mixers, choppers, processors, tanks.
- Self Contained Cleaning(scc) System: It comprises of a pump and chemical spray unit. Steam or heat water may be connected with foam production facility. It has better flexibility.

THANK YOU