BIO-SECURITY

A PRESENTATION

by

NARSIPUR CHEMICALS PVT LTD

YOUR PARTNER IN BIOSECURITY, HEALTH, HYGIENE AND SANITATION

THE COMPANY

- **NARSIPUR** CHEMICALS PVT LTD WAS INCORPORATED IN MUMBAI ON 8TH NOVEMBER, 1989 WITH THE INTENTION OF MANUFACTURING A WIDE RANGE OF CHEMICALS AND HIGH QUALITY BIO – SECURITY PRODUCTS FOR THE POULTRY INDUSTRY

What is Bio-security?

Bio-security is securing protection from micro-biological organisms

NARSIPUR realized.....

- Diseases and infections have always been a major concern to the poultry industry- especially in the hatcheries.

- Fortunately, microbial contamination can be prevented and controlled using proper management practices and use of modern health and hygiene products.

PROTECTION – CHEAPER THAN CURE

- PROPER CLEANING AND DISINFECTION ARE THE MOST IMPORTANT FACTORS FOR HYGIENE IN POULTRY FARMS AND HATCHERIES
- NARSIPUR RECOMMENDS QUALITY CONSCIOUS POULTRY FARMERS TO JOIN THE BIO-SECURITY MOVEMENT

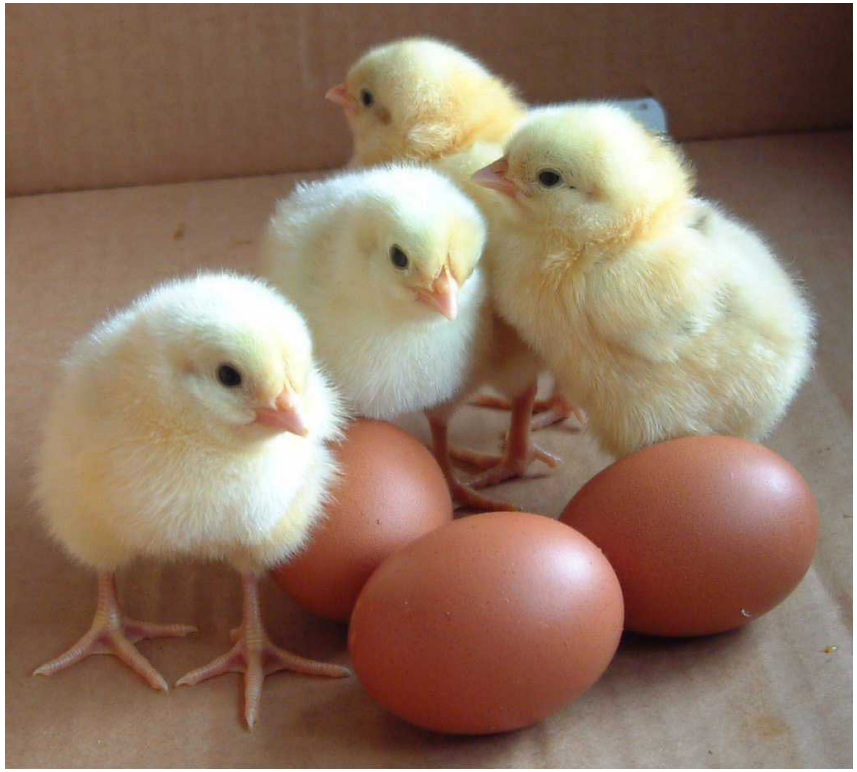
PROFIT versus LOSS

A flock receiving good health security care is a delight and a source of both pride and profit.

Failure to concentrate on planned disease prevention often leads to personal disappointment and sometimes disastrous financial loss.

Raising poultry

- Most broilers are raised indoors on a mud or concrete floor that is covered with litter (straw, sawdust, or some other material that absorbs moisture), keeping the birds clean.



Note - Litter care

Poultry Feed

- Poultry feed is designed to promote rapid growth and production.
- The main ingredients are maize and soya.
- A broiler eats an average of 0.45 kilogram of feed per week and is killed when it is between 35 and 40 days old
- A laying hen consumes about 1.8 kilograms of feed for every dozen eggs that she lays.
- And clean water

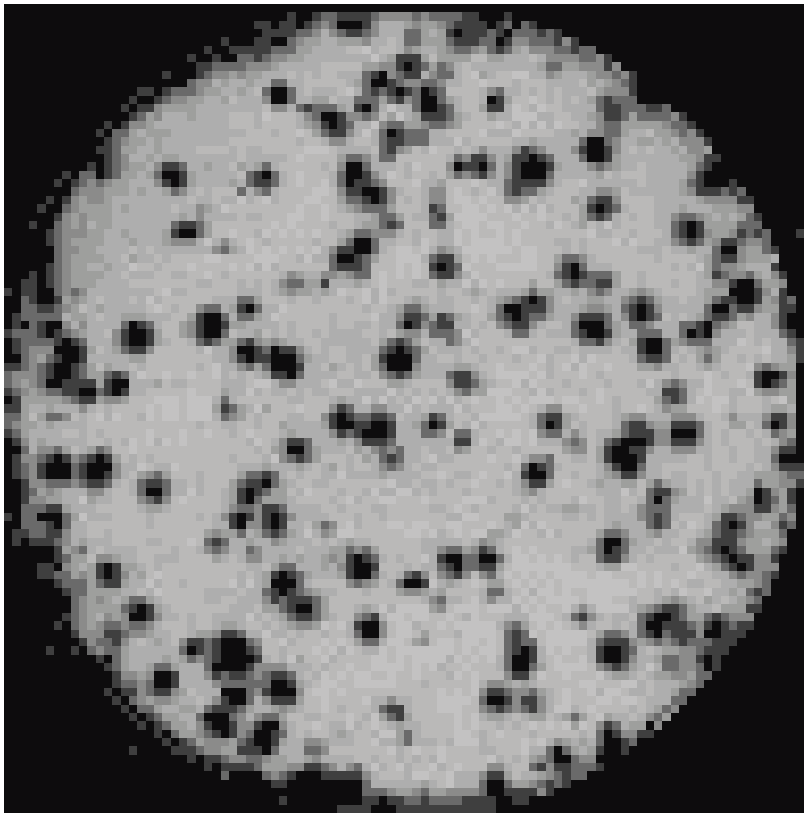
DISEASES

Poultry farmers vaccinate their birds against diseases

Certain chemicals are added to the drinking water to control growth of micro organisms

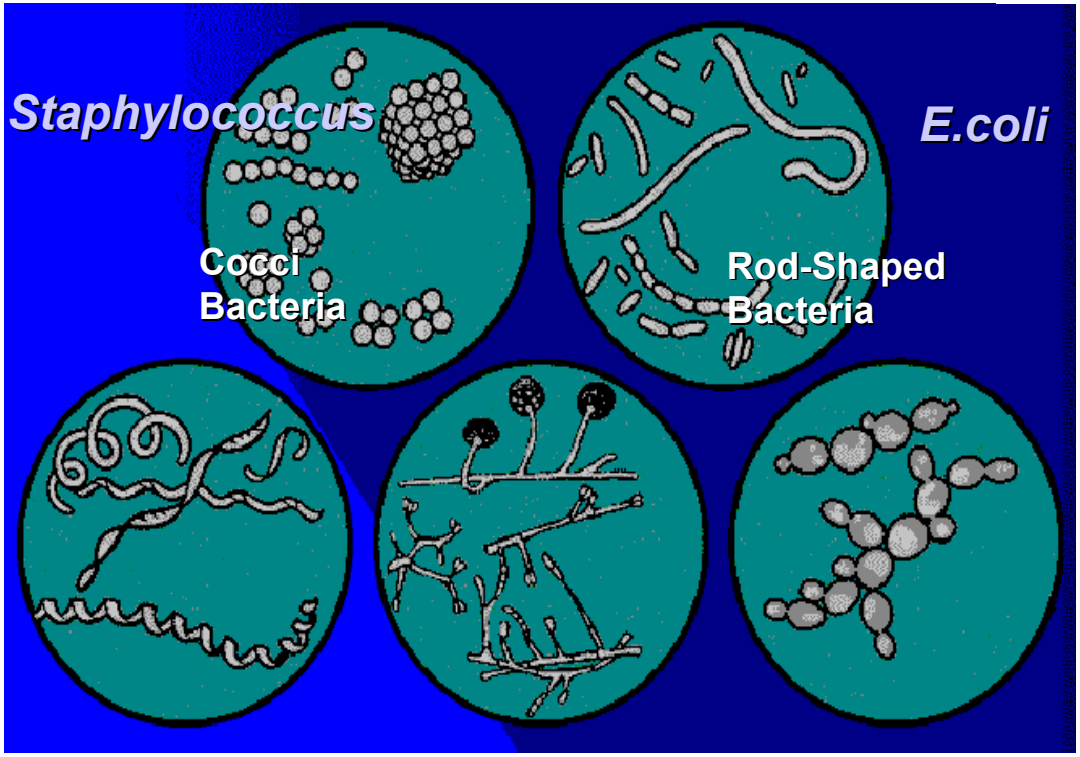
Respiratory ailments of poultry include Newcastle disease, infectious bronchitis, and laryngotrachetis. Marek's disease , which kill many birds

Understanding Microbial Control



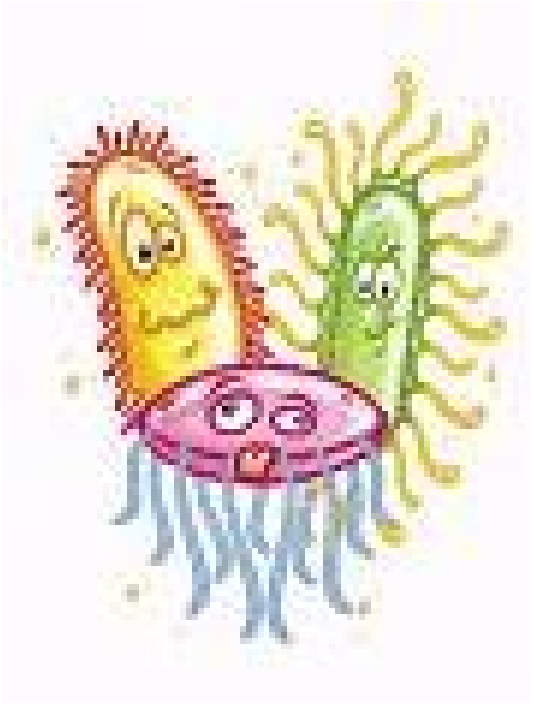
- Sterilization - The destruction of all infective and reproductive forms of microorganisms (bacteria, fungi,virus, etc.).
- Disinfection - The destruction of all vegetative forms of microorganisms. Spores are not destroyed
- Sanitation - The reduction of pathogenic organism numbers to a level at which they do not pose a disease threat to their host.

The Enemy



Pathogens

cause



- Illness / Disease / Death

Staphylococcus aureus
Salmonella
Clostridium
Mycoplasma
Gumboro
Mareks

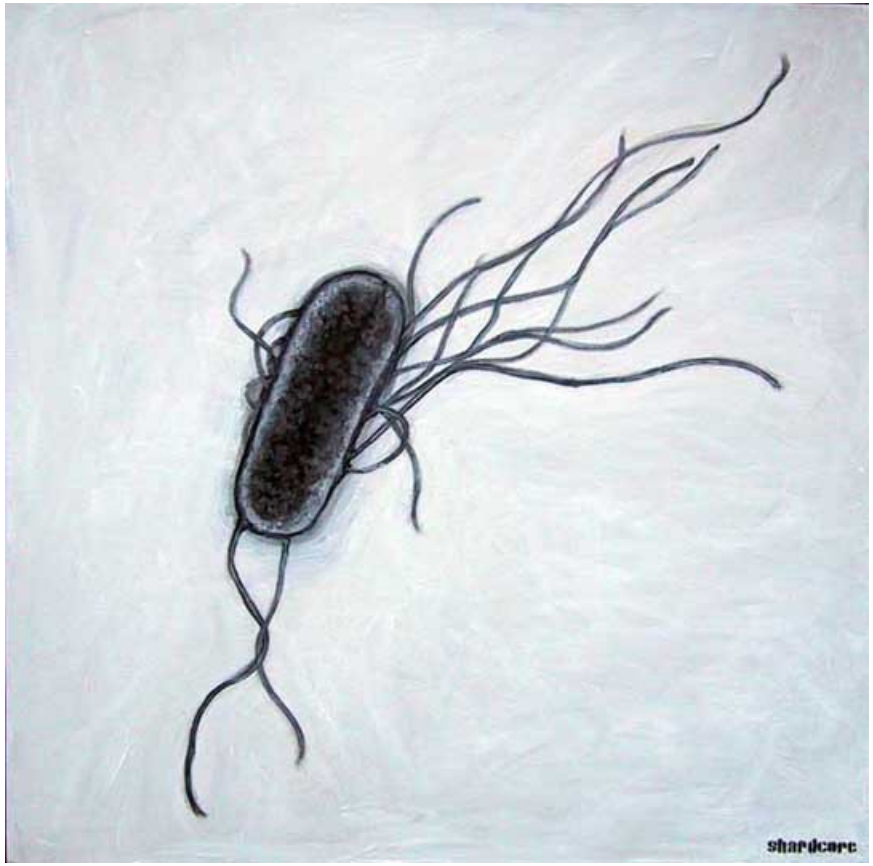
E.coli in Water

The dreaded Escherichia coli belongs to the family of Gram negative group of anaerobic bacilli. It is a non-spore forming rod shaped bacteria. It grows well on simple artificial media at temperatures of 15 to 40 C at pH 6.5 to 8.0. E.coli is the index organism of

Advantages of the Index organisms:

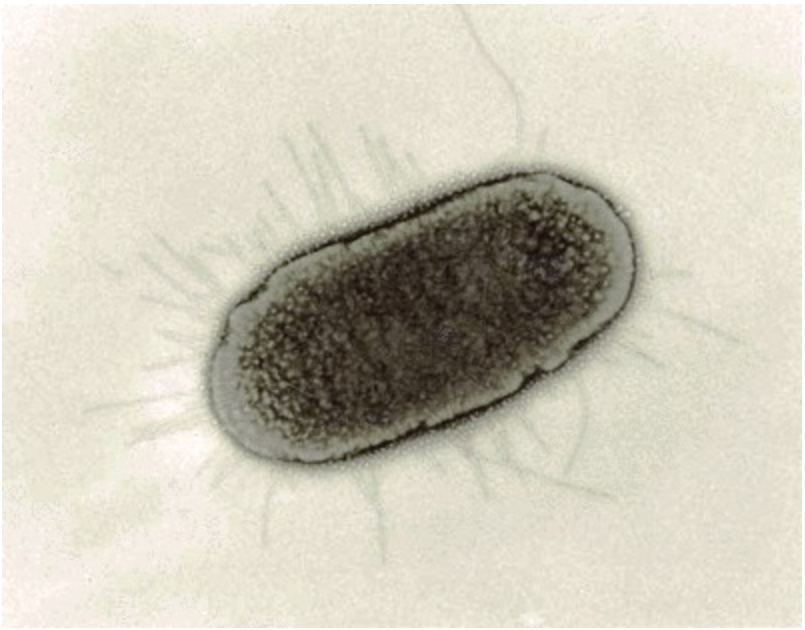
i) E.coli survives in water longer than most pathogens. This makes it possible to detect recent as well as earlier pollution.

ii) The presence of E.coli can be easily detected in a short period of time at low cost in contrast to the more tedious, costly and time consuming identification of a specific pathogen.



Significance of the Index

Organisms:



E.coli generally outnumber other organisms and being able to multiply to some extent in open polluted waters, may survive for weeks or months depending upon the conditions in the waters.

Limits:

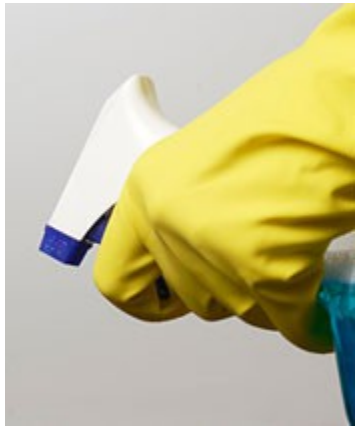
Properly filtered water should have total aerobic bacterial counts < 1000 cfu. Coliforms should be < 3 per 100 ml. E.coli

Factors affecting sanitized hatchery

- *The type of surface being treated.*
- *The cleanliness of the surface.*
- *The type of organisms being treated.*
- *The durability of the equipment/surface material.*
- *Time limitations on treatment duration.*
- *Residual activity requirements.*

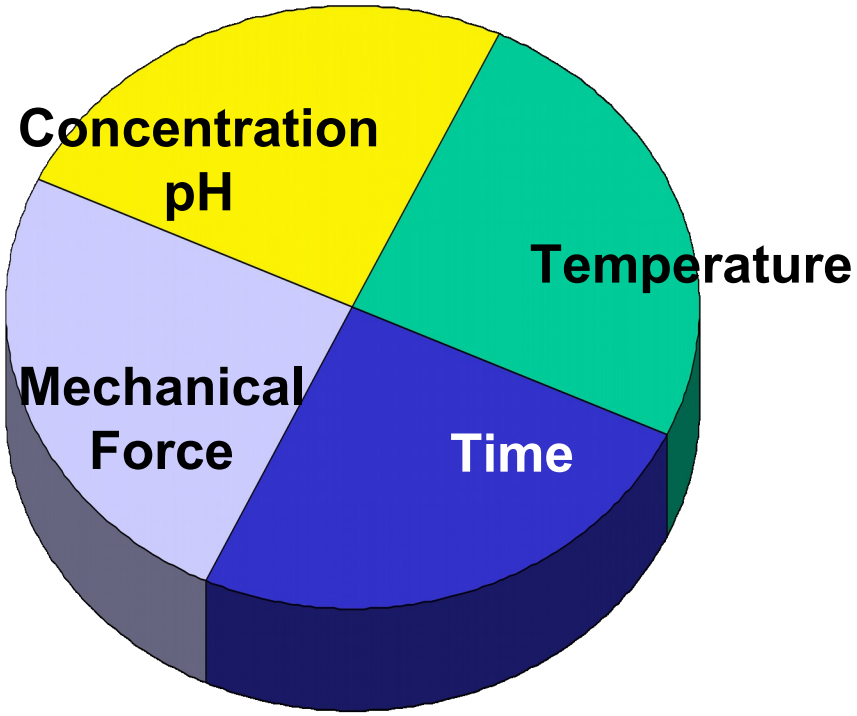
MAXIMISING DISINFECTANT BENEFITS

- Selecting disinfectants, considering their effectiveness on organisms that are of greatest concern
- Satisfy all efficacy requirements demanded of disinfectants
- Allow adequate contact time (usually 30 minutes is sufficient)



SELECTION OF DISINFECTANTS

- Every farm has it's unique problems
- No single molecule based disinfectant is effective by itself
- Hence, a selective synergistic combination formulated for practical field conditions are most effective



4 Factors of Cleaning

Why Should Cleaning & Sanitizing Be Carried Out As Two Steps?

- The presence of any residual soil can chemically or physically impair the efficacy of sanitizers

- Soil may shield microorganisms from the necessary direct contact with the sanitizers

HOW CAN NARSIPUR HELP?

- Suggest the right disinfectant
- Analyse water requirements
- Suggest a controlled disinfection programme
- Improve productivity on farms and hatcheries

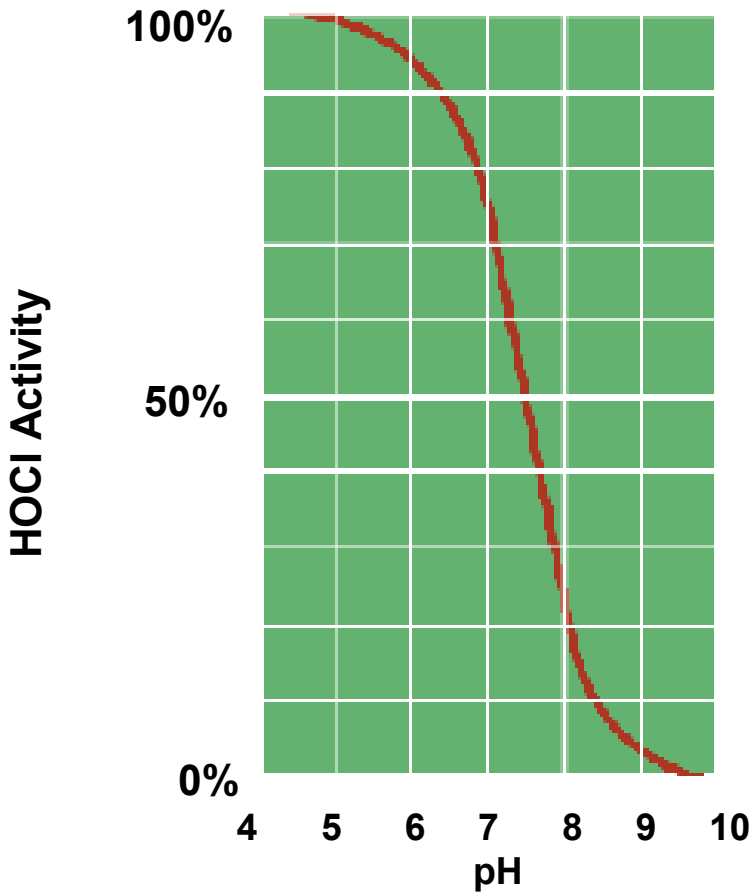
Approved Sanitizers

- Chlorine
- Chlorine dioxide
- Iodophors
- Quaternary ammonium compounds
- Carboxylic acid sanitizers
- Peroxy acid compounds
- Phenolic

Chlorine

- Chlorine gas
- Sodium, calcium hypochlorites
- Powdered organic chlorine sources
  - Maximum concentration - 200 ppm available chlorine

Chlorine Advantages



- Broad spectrum of activity
- Hard water tolerant
- Low temperature efficacy
- Relatively inexpensive
- No residual activity / non film forming

Chlorine - Disadvantages

- Potential for toxic chlorine gas formation
- Corrosive
- Irritation
- Unstable, short shelf life
- Formation of potentially toxic by-products

Iodophors

- Iodine + Surfactant + Acid
  - Maximum Concentration - 25 ppm

Iodophors - Advantages

- Broad spectrum of activity
- Less irritating than chlorine
- Low toxicity
- Effective pH range
  - Broader than chlorine - 2-8
- Less corrosive than chlorine
- Stable, long shelf life
- Color of use solution provides visual control

Iodophors -Disadvantages

- Staining porous and plastic materials
- Poor low temperature efficacy
- Corrosive at high temperatures.
- May produce excessive foam on CIP application
- More expensive than chlorine
- Odor may be offensive

Quaternary Ammonium Chloride Compounds

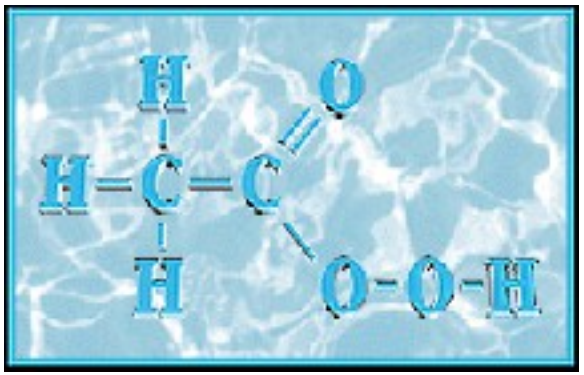
- Benzalkonium chloride
- Substituted benzalkonium chloride
- Dual quat
- Twin chain quat
  - Maximum Concentration - 200 ppm

Quaternary Ammonium Chloride Compounds - Advantages

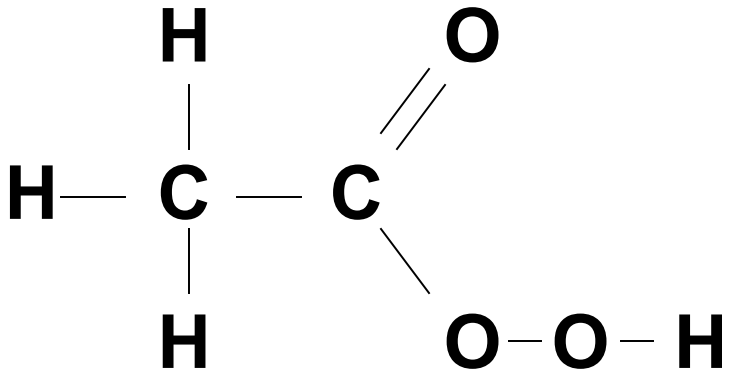
- Non toxic, odorless, colorless
- Non-corrosive
- Temperature stable
- Relative stability in presence of organic soil
- Broad spectrum of activity
- Residual antimicrobial film
- Some detergency and soil penetrating ability
- Stable, long shelf-life
- Mold and odor control

Quaternary Ammonium Chloride Compounds - Disadvantages

- Incompatible with anionic wetting agents
- Low hard water tolerance
- Limited low temperature activity
- Excessive foaming in mechanical applications
- Antimicrobial activity may vary depending on formulation



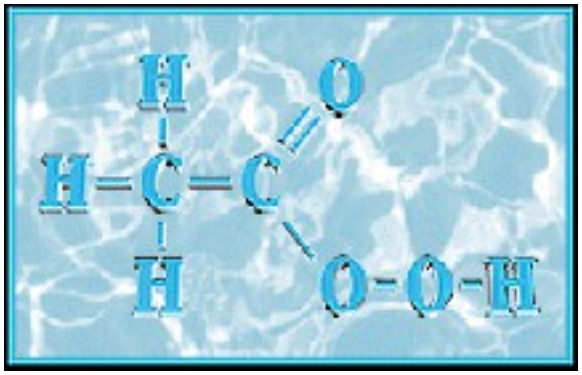
Peroxy Compounds

H_2O_2 + CH_3COOH ⇌ 

Hydrogen Peroxide

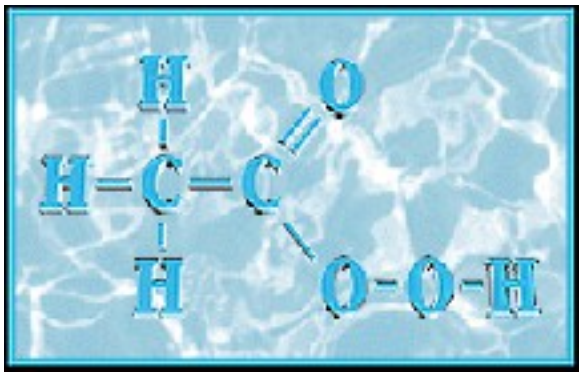
Acetic Acid

Peroxyacetic Acid



Peroxyacetic Acid - Advantages

- Low foam
- Broad temperature range of activity
- Combine sanitizing and acid rinse
- No residue
- Generally non-corrosive to stainless steel and aluminum
- Relative tolerance to organic soil
- Phosphate free
- Environmentally responsible
- Broad spectrum of bactericidal activity
- Active over broad pH range up to pH 7.5

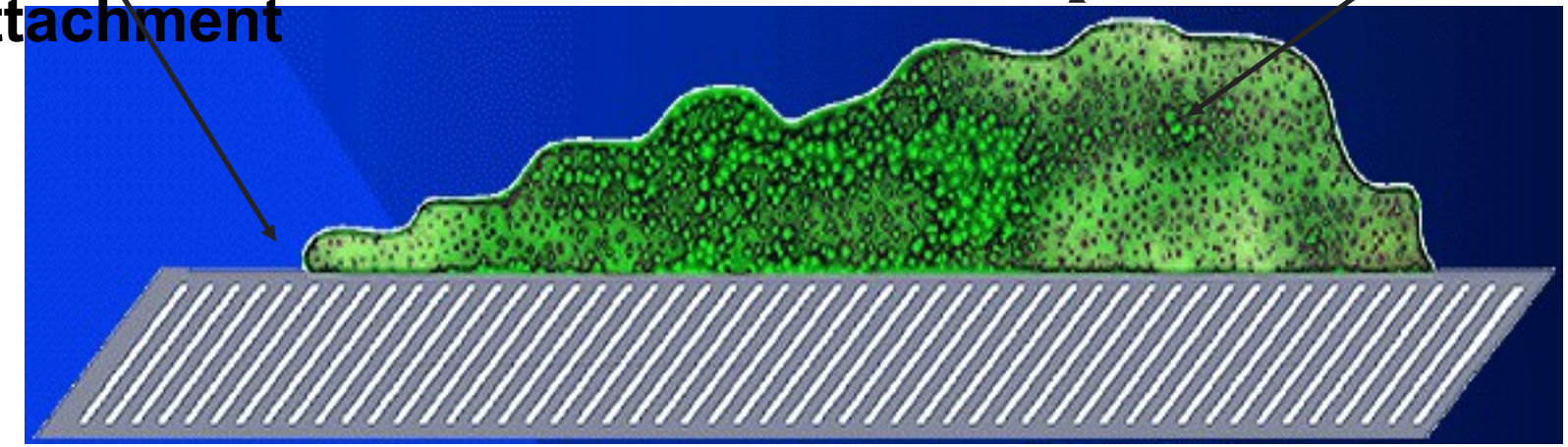


Peroxyacetic Acid -Disadvantages

- Metal ion sensitivity
- Corrosive to soft metals
- Odor of concentrate
- Varied activity against fungi

BIO - FILMS

- Bacterial Attachment
- Mass with Protective Film (Slime)
- Traps Nutrients and Bacteria

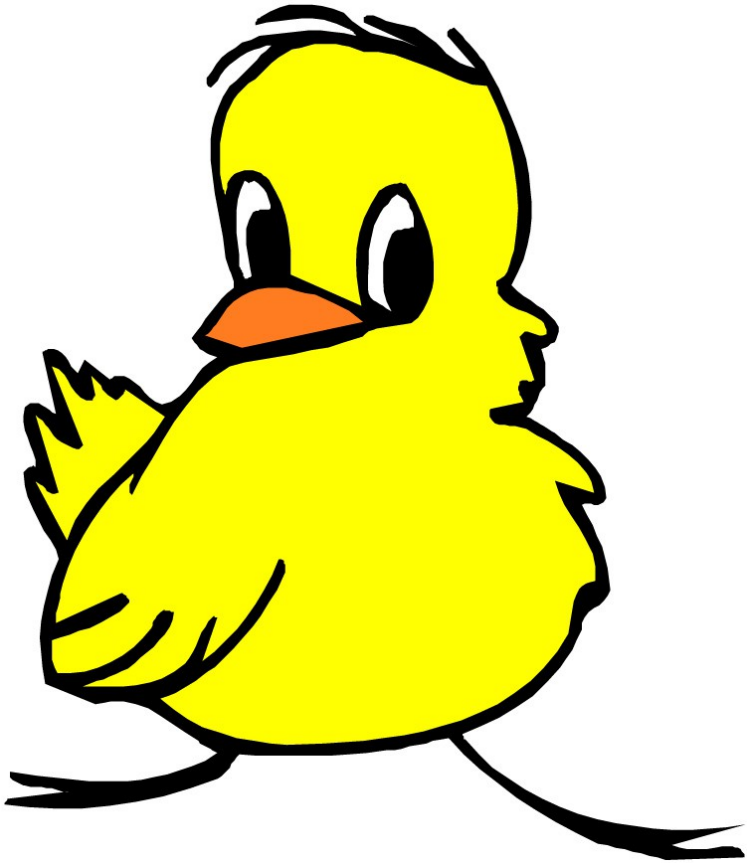


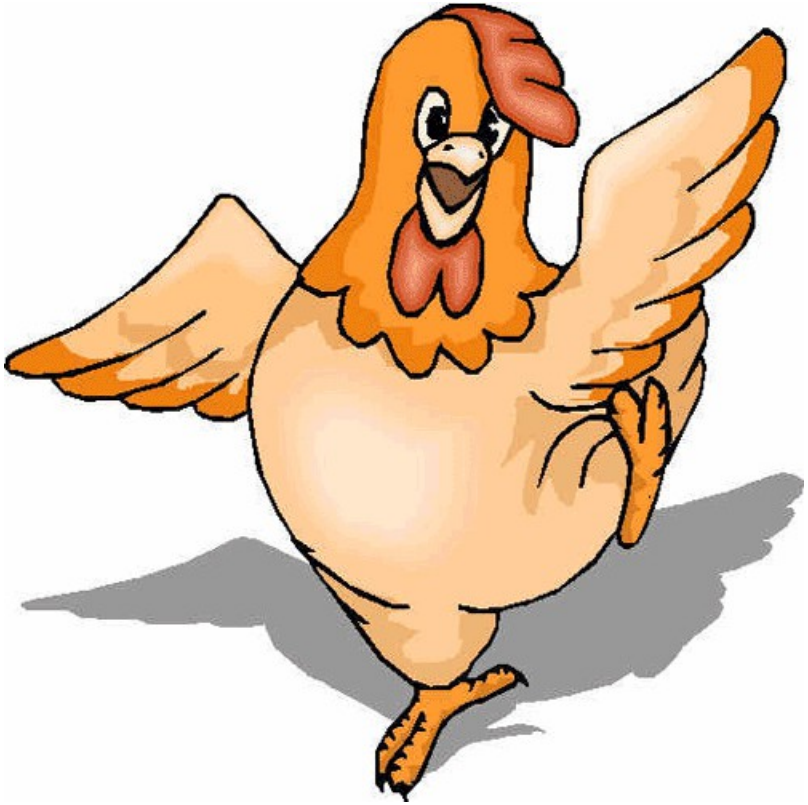
- Prevents Anti-Microbial Action
- Effective Cleaning Required

IDEAL SANITISER

- Broad Spectrum of activity
- Rapid Kill
- Easily prepared and soluble in water
- Stable
- Tolerant of soil, hard water, etc.
- Environmentally compatible and non-toxic
- Non - corrosive
- Economical
- Safe to use

Chick to chicken
- a 38 day wonder!





EN - products for Poultry Bio-Secure Environment

- ENCIKOL - PH
- ENCIVET - WT
- ENCIKLIN-PL56
- ENCIPHOR-PLUS
- ENCIFORM – RM
- ENCIMOX – PT
- p H – A
- POLYCAR – NC
- UNIDROP
- POWERKLEEN
- CHLORAMINE – T
- INSTA-DIOX

EN - way

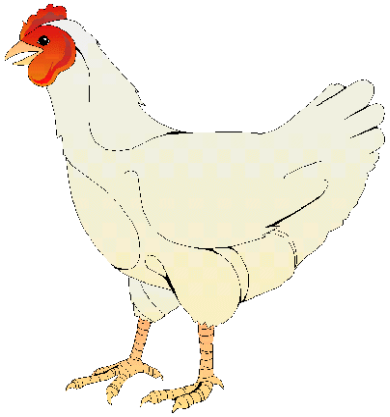
From here

To McDonald

REMEMBER
If you take care of the birds,

the birds will take care of you!

PROTECT YOUR BIRDS NOW!



AND

CALL NOW !– Before it is late

NARSIPUR
CHEMICALS
PRIVATE
LIMITED.