Inventing a Food Safe World

Kersia UK & Ireland

“Hygiene & Biosecurity”

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Title of the presentation

Our Poultry organisation in the UK

COMPLETE LOCAL SUPPORT

- Lockerbie HQ
- Mallusk Factory & R&D Center
- Medentech Wexford
- Poultry Sales Support
- Holchem Labortatories

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What is Good Biosecurity?

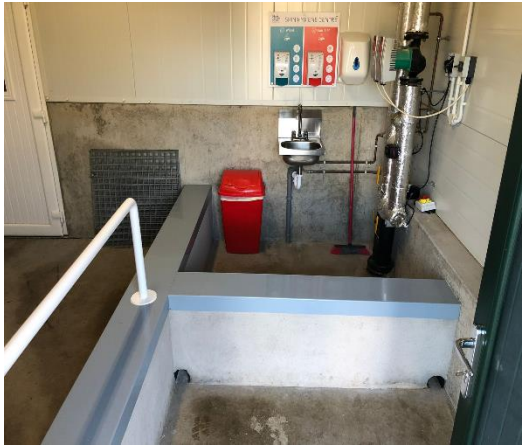
“Application of a series of measures designed to prevent disease causing agents that might affect the health, welfare & performance of a flock”

“Biosecurity is the cheapest & safest management practice and is essential to keep our country free from disease”

Set up measures to limit the introduction & spread of diseases on you farm

1. Site Security – Fences/Gates/Signs/Wheel Sprayer
2. Farm layout/Location
3. Hygiene Barriers/Hygiene stations/showering
4. Farm Trace – Visitor record/protocols - everyone can carry diseases
5. Staff/Visitors/Catching Crews- Training protocols, signs & required equipment
6. Farm traffic – visitors, egg lorries & feed lorries etc
7. Clean clothing/boots – separate house
8. Covered foot dips - farm entrance/houses entrances – changed frequently
9. Wild Life/Rodent control/Domestic animal control/farm animals
10. Fallen stock disposal – rendering/incineration
11. Farm specific tools & house specific equipment
12. Weeds/hedging around farm - vegetation
13. Feed bins/Feed deliveries – dust
14. Maintenance
15. Litter removal
16. Good Cleaning & Disinfection Practices

"Good Hygiene & Biosecurity Is Everyone's Responsibility"

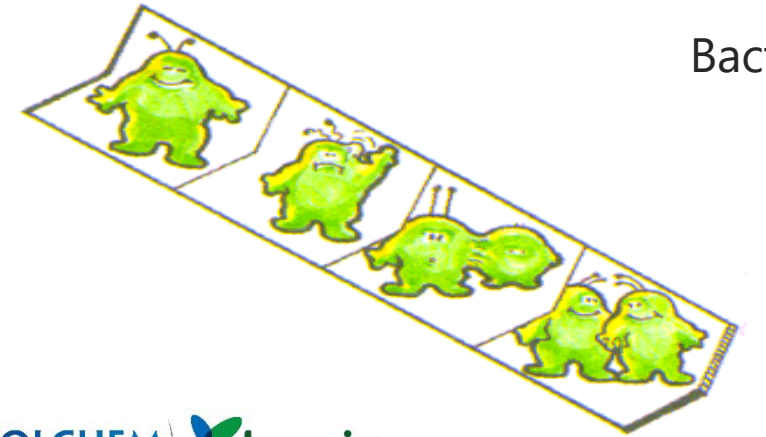


Biosecurity is Key:

Photos Courtesy of

Why Clean & Disinfect?

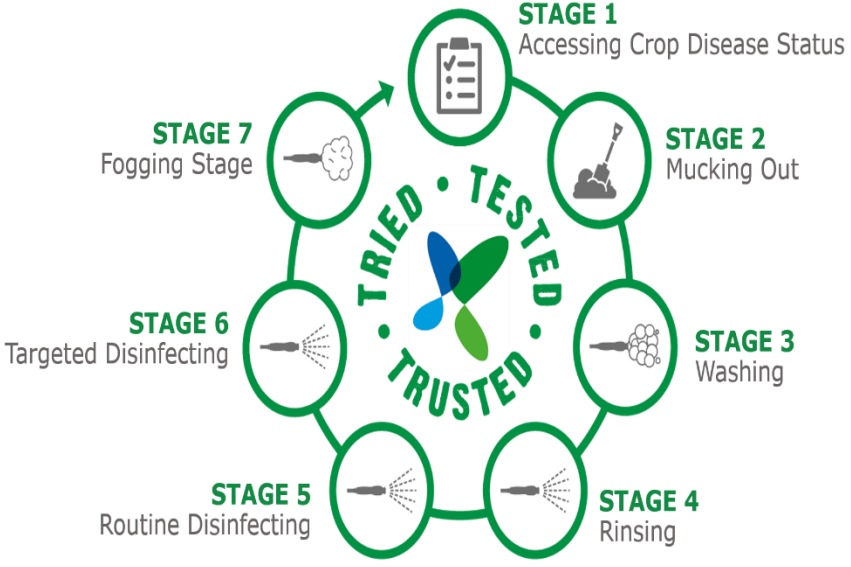
"Cleaning poultry sheds and equipment between flocks is critical to reduce the presence of viruses, bacteria and protozoa, which are all potentially pathogenic to incoming stock."



Bacteria can divide into two ever 20/30 minutes

Over 2 million in just 7 hours !!!

Recommended Cleaning & Disinfecting Programme



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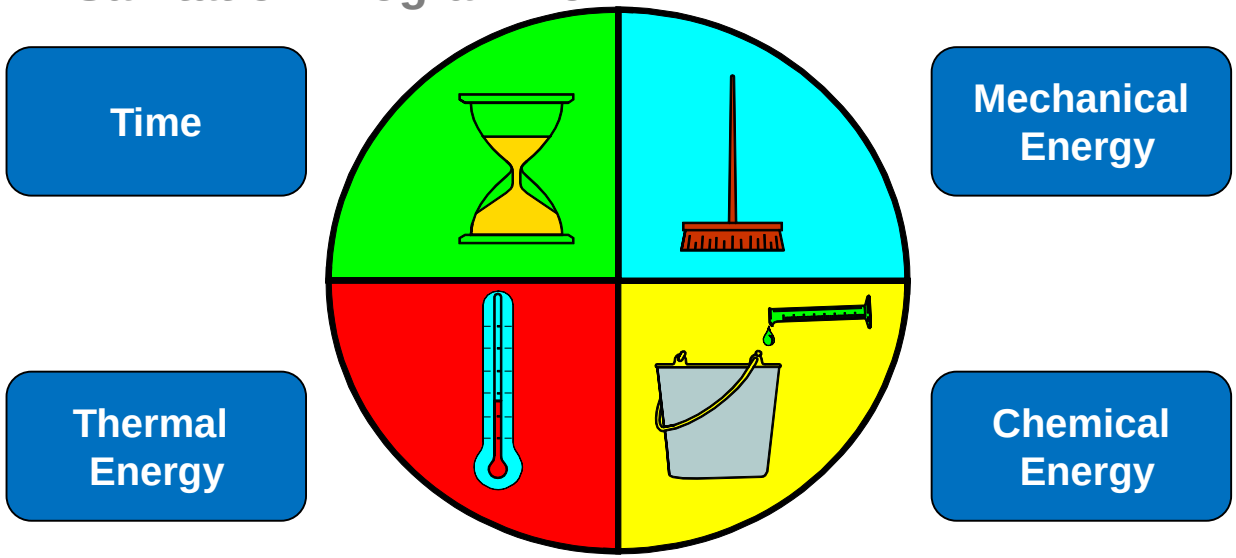
Principles of Cleaning

The Four Fundamental Parameters of the Sanitation Programme



Detergent Products

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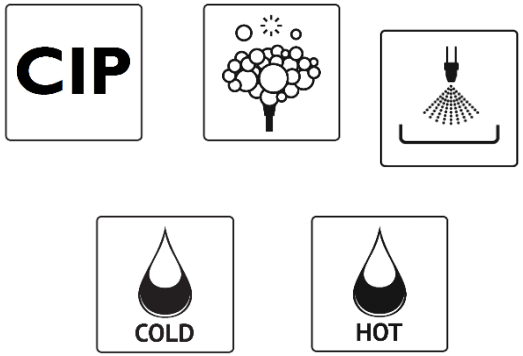
What does a cleaning (detergent) product contain?

The design of a specific detergent product will be dependent upon its intended application. Typically, a detergent product will be a formulated mixture based upon:

- Acidifing / alkalinising agent
- Surfactants
- Sequestrants
- Solvents
- Fragrance / Dye



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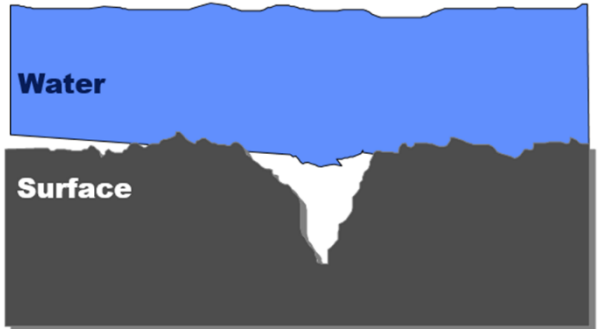
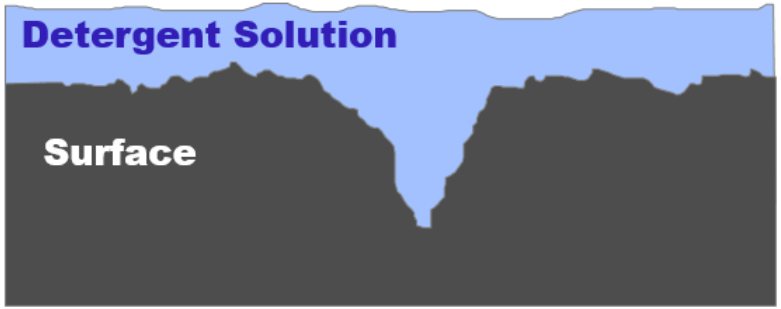
Surfactants

- Reduce surface tension – allowing water to wet surfaces
- Loosen soil
- Emulsify soil (disperse in water)
- Hold soil in suspension until it can be rinsed away
- Impart performance characteristics to the product (i.e. improve adherence)
- Control foaming properties (+ or -)
- Have a hydrophilic (water loving) component and a hydrophobic (water hating) component
- May be neutral – non-ionic
- May be positively charged – cationic
- May be negatively charged – anionic
- May have both positive and negative charges - amphoteric

Surfactants

Wetting of Crevices





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Sequestrants

- Dissolve scale on equipment surfaces.
- Keep hardness ions e.g. Calcium & Magnesium in solution (bind metal ions)
- Have a hydrophilic (water loving) component and a hydrophobic (water hating) component
- May be – neutral; non-ionic; cationic; anionic; or amphoteric
- Examples – EDTA; Organic acids; gluconates; citrate
- Threshold agents – stop scale formulation during rinsing
- Examples – Phosphonates; and Tripolyphosphate

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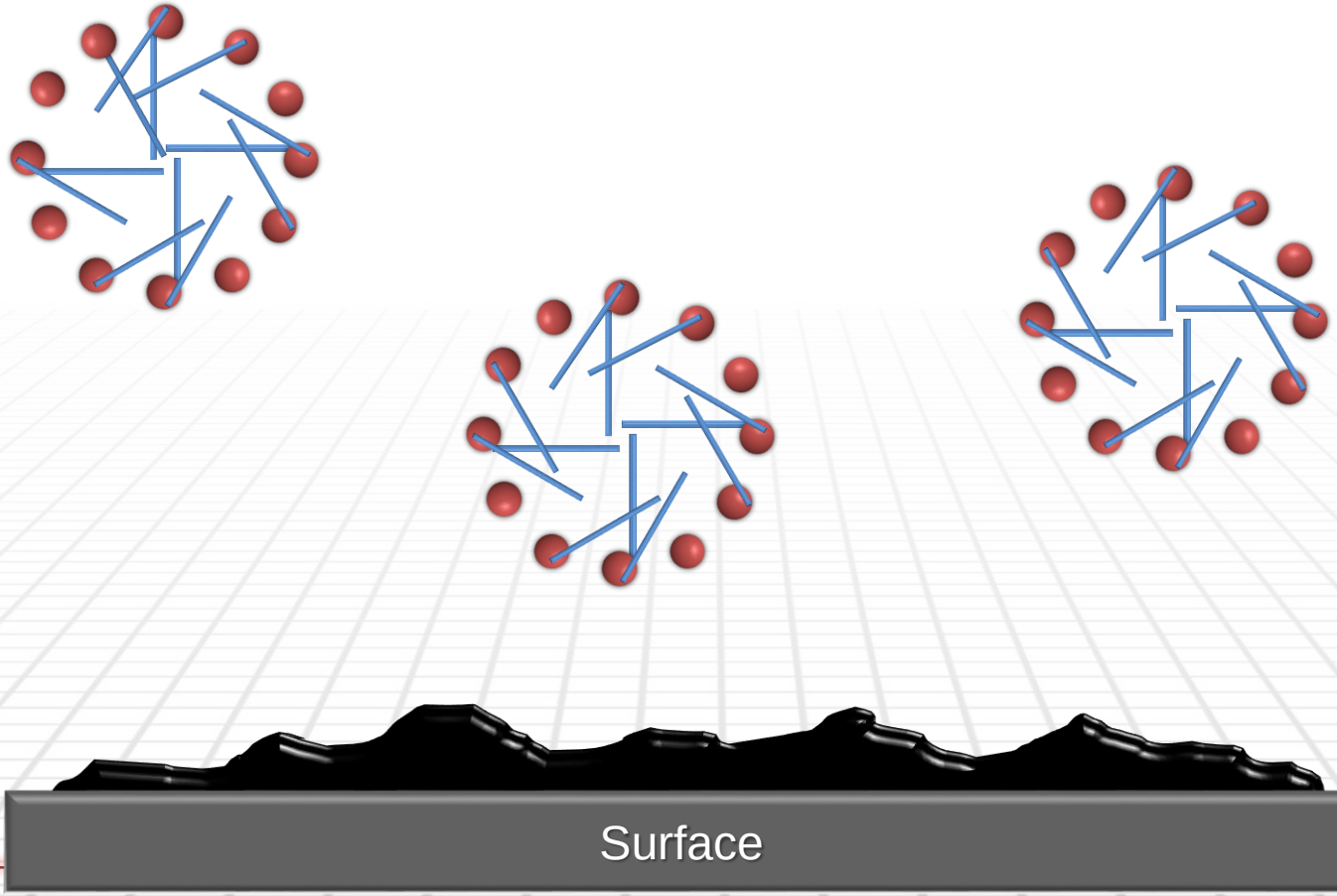
How Detergents Work



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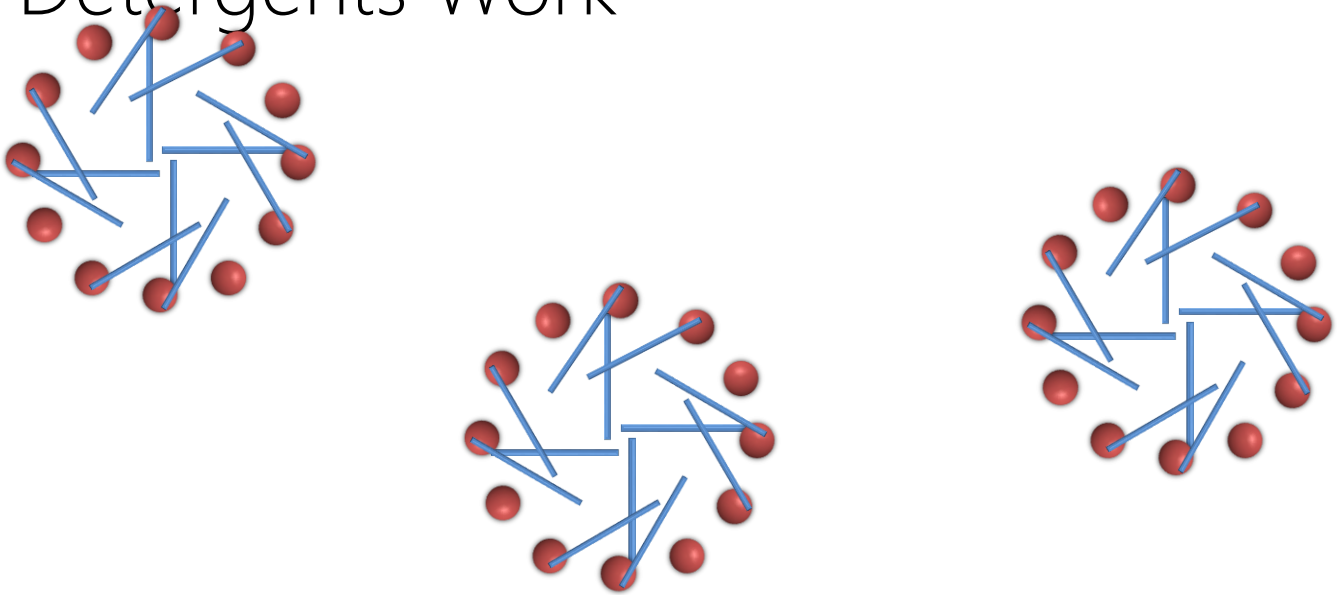

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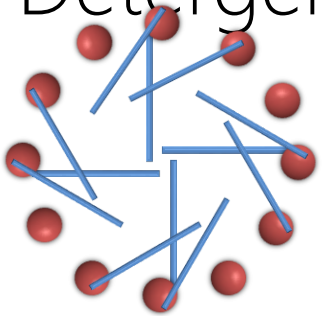

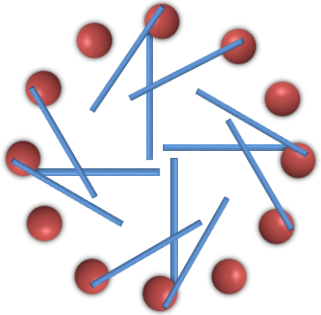

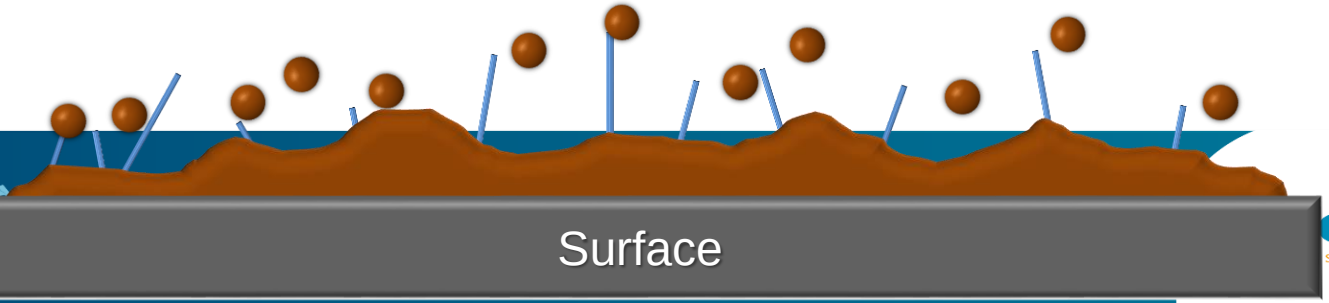

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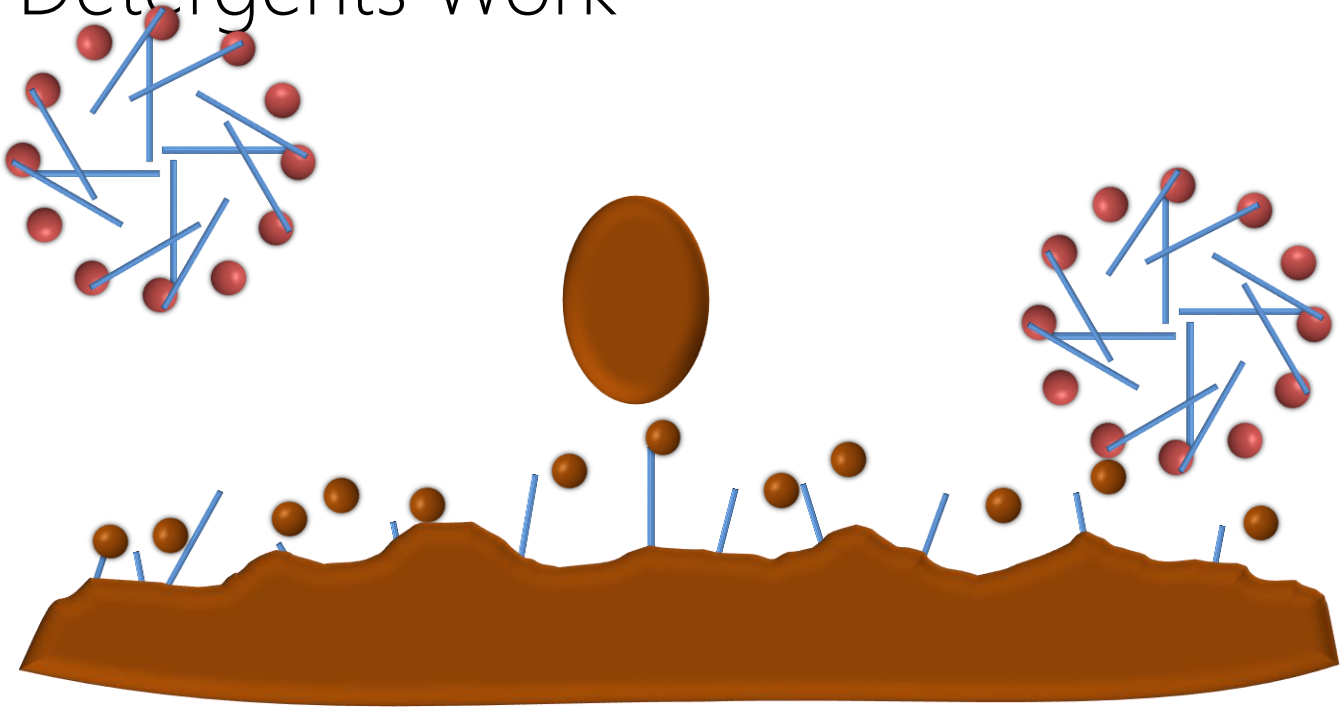


ECOFOAM ADVANCED

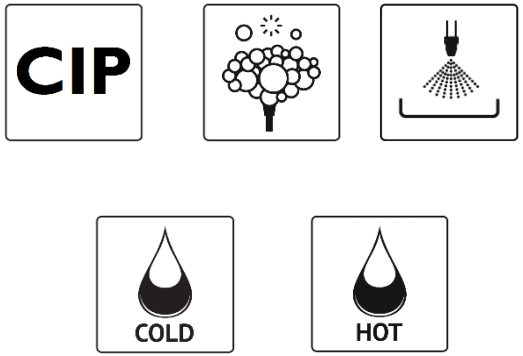
- ✓ Concentrated clear liquid
- ✓ Provides effective removal of fat, grease & soil
- ✓ Alkaline detergent gives powerful cleaning action
- ✓ Enhanced protein and organic debris removal
- ✓ New Advanced Thin Film Forming Technology gives enhanced cling to surfaces
- ✓ Areas of application include process equipment, conveyors, preparation tables, working surfaces, floors, walls/tiled surfaces, intensive animal rearing e.g. poultry houses and hatcheries at a dilution rate of 1% to 3%

Disinfectant (Biocidal) Products

What does a biocidal (disinfectant) product contain?

The design (and choice) of a specific disinfectant product will be dependent upon its intended application. Typically, a disinfectant product will be a formulated mixture based upon:

- Biocide (active ingredient)
- Acidifying / alkalinising agent
- Surfactants
- Sequestrants
- Solvents
- Fragrance / Dye



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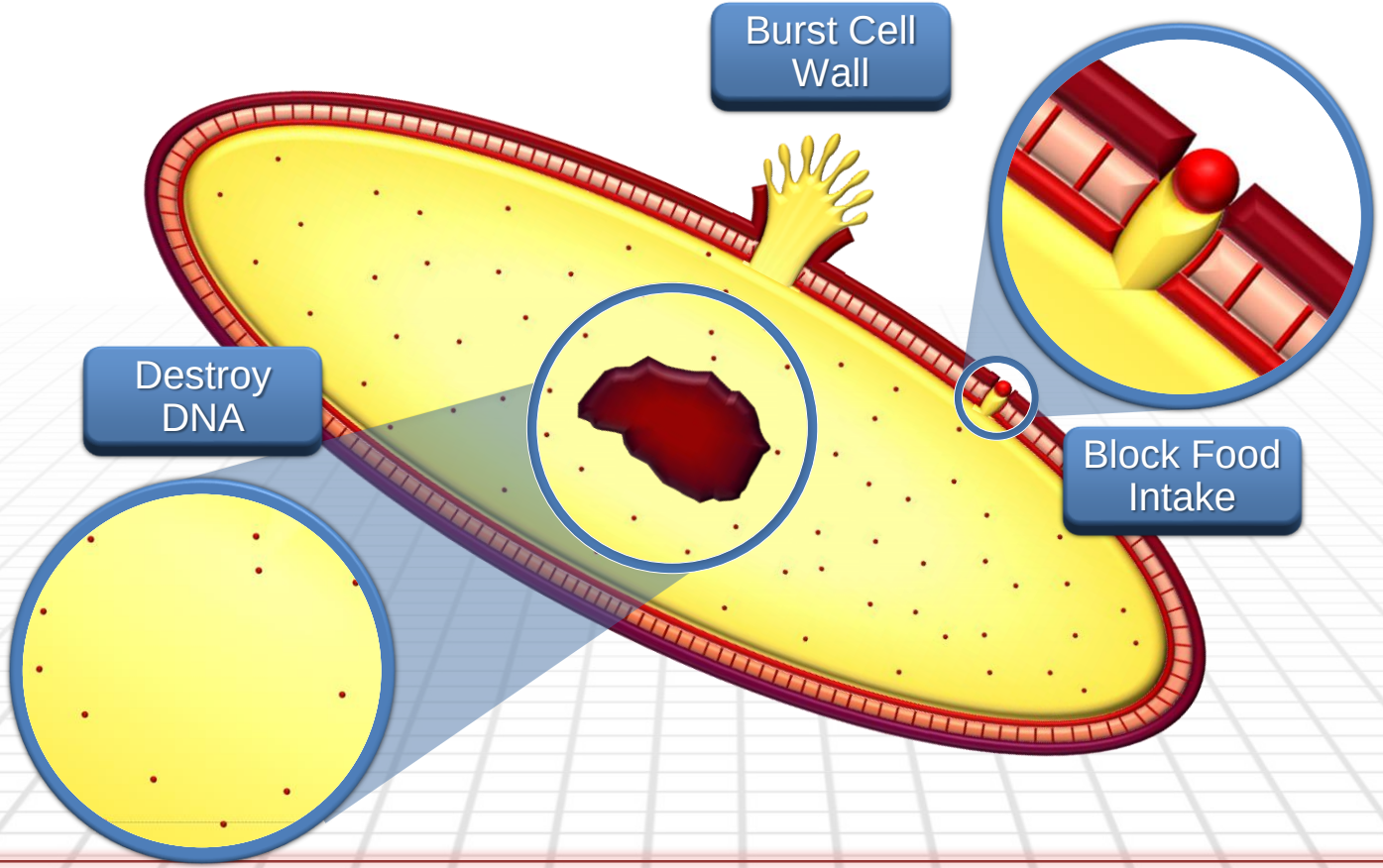
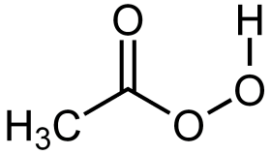
How Do Disinfectants Kill Bacteria?

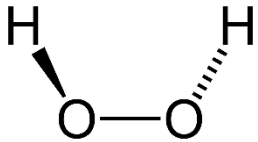


Disinfectant Properties – Peroxides



Peracids: e.g. peracetic acid

- Complete spectrum of action
- One of the most rapid killing activities. It can be synergised by wetting surfactants.
- A pungent, irritant smell is typical of peracetic acid.
- Corrosive.
- As they are very sensitive to dirt, they are typical terminal disinfectants.



Hydrogen peroxide:

- Complete spectrum of action
- Relatively high concentration required for good killing action (>3%)
- Sensitive to dirt. Dirt changes hydrogen peroxide from a disinfectant to a cleaner.
- As Peroxides are made up of Carbon, hydrogen and oxygen, they break down in to the environment naturally.

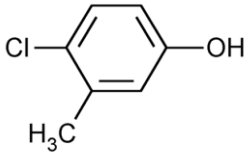
As oxidising compounds, Peroxides will form free radicals, that will chemically destroy enzymes and proteins within the cell, meaning they can no longer function correctly or survive. This mechanism is quicker than that for non-oxidising compounds.

TRIED • TESTED • TRUSTED

Kilco SCIENCE IN SOLUTION

Cyclex

- Specially formulated chlorocresol based disinfectant
- Due to its lipophilic nature is capable of penetrating the outer wall of sporulated oocysts
- Acts as a cross protoplasmic poison, penetrating and disrupting the cell wall leading to precipitation of the cell proteins
- Eliminates risk of residues (Cyanuric acid free)
- Contains no chemicals of industry concern



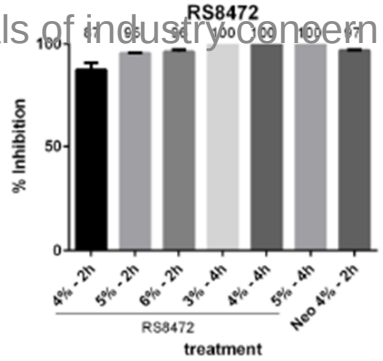
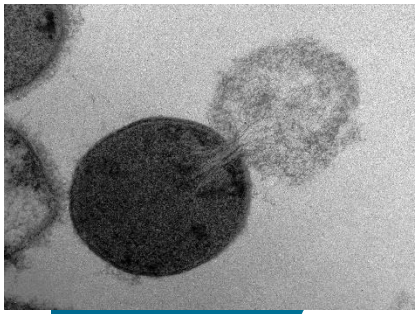


Figure 11 Inactivation efficacy of RS8472 against C. parvum oocysts compared to untreated oocysts



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Kilco SCIENCE IN SOLUTION

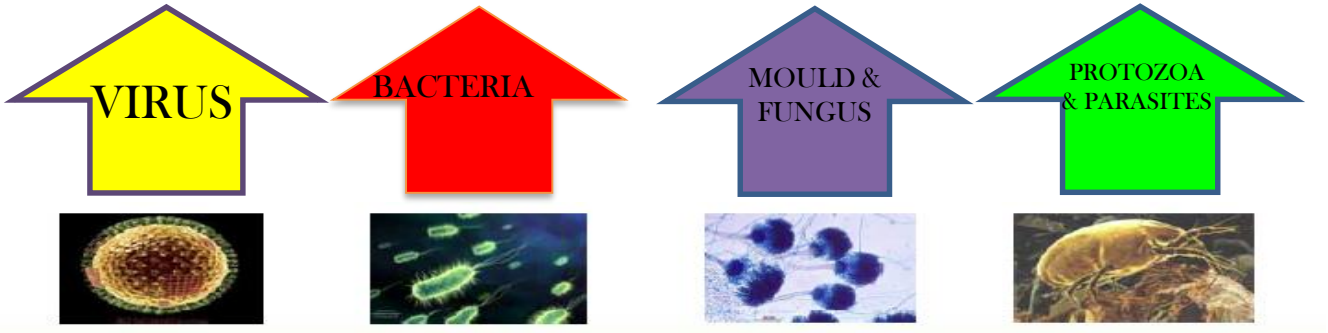
Disinfection – The Final Key Stage

- Viroshield
- Virex
- HPPA
- Fumagri

- Viroshield
- Virex
- HPPA
- Kilcox Extra
- Fumagri

- Viroshield
- Virex
- HPPA
- Fumagri

- Cyclex
- Kilcox Extra
- Fumagri



- Newcastle disease
- Gumboro
- Avian Influenza

- E.coli
- Salmonella
- Mycoplasma
- Campylobacter

- Aspergillosis
- Mould
- Mycotoxins

- Coccidiosis
- Intestinal worms
- Blackhead

The Biocidal Products Regulation (BPR)

- The basic principle of the BPR is that a **biocidal product** (BP) must be authorised before it can be made available on the market or used in the European Union (EU)/ European Economic Area (EEA).
- There are two part to this;
  - The active substance is evaluated and, provided the criteria are fulfilled, is then approved in one or more specified product-types (PT)
  - The authorisation of each biocidal product consisting of, containing or generating the approved active substance(s).
- Active Substances authorised at Union level
- Biocidal Products authorised at Member State level or at Union level.

Hazard Symbols

CORROSION
Causes severe skin burns and eye damage.

ENVIRONMENTAL
Very toxic to aquatic life
Avoid Release to the environment
Understand where your drains go
Apply at correct dilution

OXIDISING
May cause fire (store in a well ventilated area and has the correct venting cap)
Flammable

Hazard Symbols

EXCLAMATION MARK

Causes serious eye and skin irritation

FLAMMABLE

Keep away from naked flames
Store in a cool well ventilated area

TOXIC

Toxic if swallowed, in contact with skin or if inhaled.

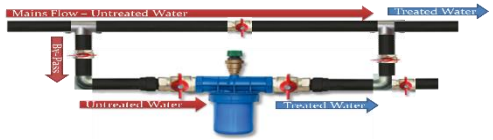
HEALTH HAZARD

May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

Water Hygiene Treatment's:

"Without water disinfection it is impossible to reduce antibiotics"

- Hydrogen Peroxide (with/without silver)
- Chlorine Dioxide
- Hydrochlorus Acid/Chlorine
- UV

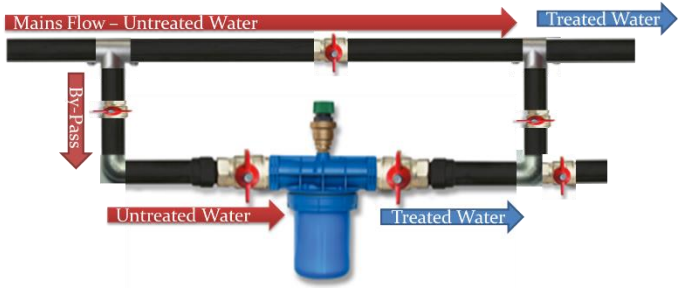


Product Review

2 different chemistries highlighted today:

Aquatabs In-Line – Hypochlorous acid

Constant dose water sanitisation



Aqua 50 – 50% hydrogen peroxide

For terminal disinfection

Aquatabs – Our strengths

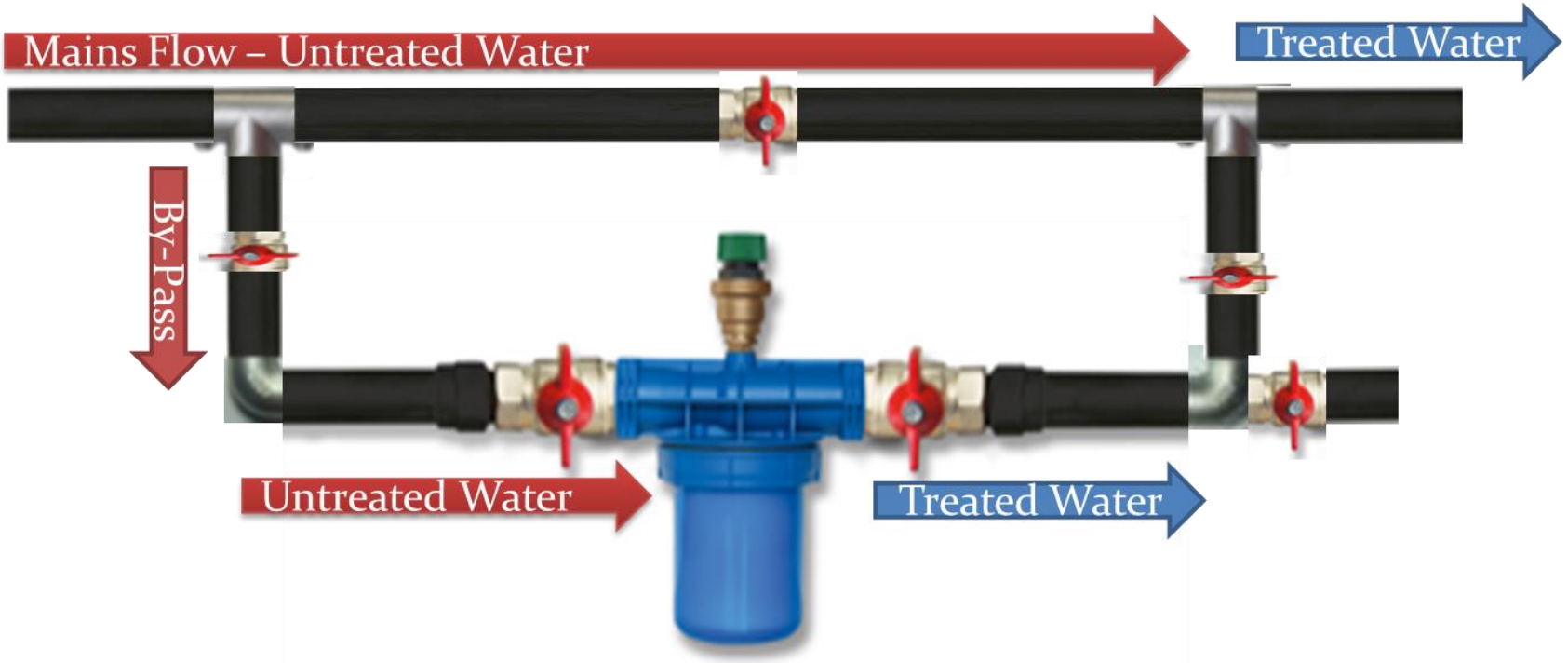
- Aquatabs® is the most respected small dose Water Brand in the world
- 2 year health impact study in the worst Bangladesh conditions
- Water pathogen & biofilm experts
- We will drink the water on your farm!

Aquatabs In-Line – the benefits.....

Suitable for all water systems; mains, wells and boreholes

- Easy to install, no power required
- Each cartridge will sanitise up to 360,000L of drinking water, making it potable for the livestock.
- Low maintenance and no moving parts
- Assists in the control of biofilm build up - avoids the reestablishment of the exopolysaccharides (EPS) matrix which is bearing the biofilm
- Assists in the control of calcium deposits at nipple drinkers and pipes
- Generates optimum pH-level
- Maintains healthy water
- Cost effective and sustainable water solution
- Continuous / automatic dosing on the flow of water at point of entry into a tank or in-line for gravity / open and/or pressurized water systems
- 10 to 30 litres per minute - Replace cartridge when empty

Aquatabs In-Line – how it works



Lets not forget Aqua 50.....

- Aqua 50 is a 50% hydrogen peroxide
- Excellent efficacy at biofilm removal
- Very good at killing virus/bacteria and other pathogens in the water
- To be used at 1% at terminal cleanout as a ‘shock dose’
- Readily degrades to harmless by products
- Doesn’t contain silver nitrate

Hydrogen peroxides are ideal at turnaround/terminal Disinfection. They can work vey well as a constant dose sanitiser, but they either need expensive dosing equipment or daily stock solutions making.

Thank you for listening

Any questions?

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