

POULTRY

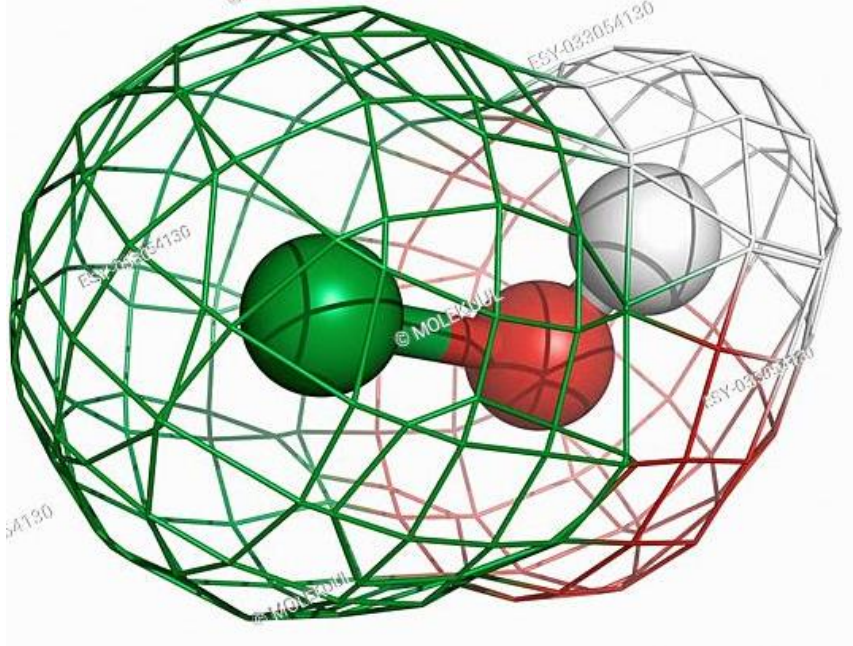


atm plus



Eco Utility Systems

Hypochlorous Acid (HOCl)



also known as

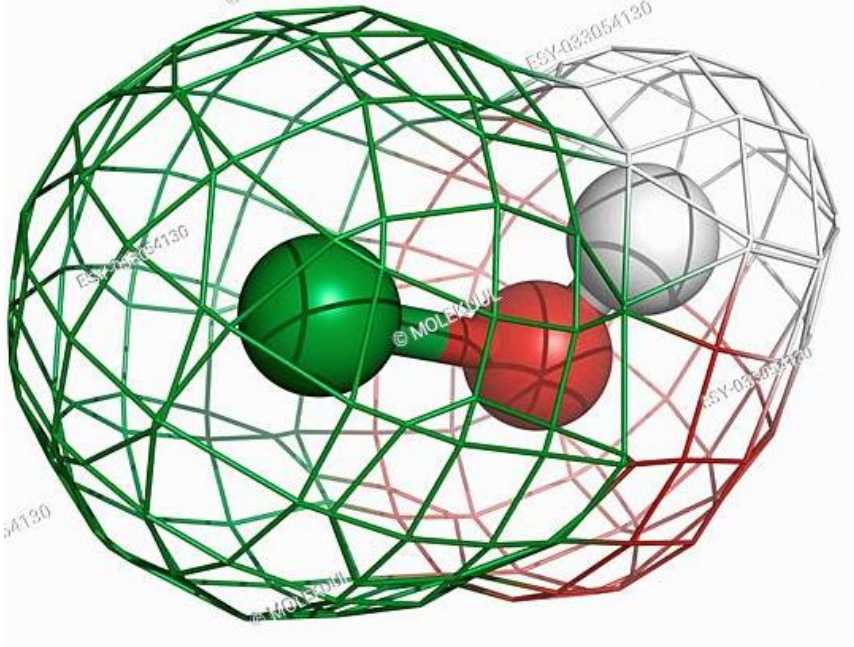
- electrolyzed water / electrolyzed reduced water
(ERW, EW)
- electrochemically activated water
(ECA)
- anolyte
(AEW, NEW, SAEW)

atm plus has a broad spectrum anti-microbial use



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Hypochlorous Acid (HOCl)



atm plus

most effective disinfectant in the chlorine family

- No polar charge
- Low molecular weight

PERFECT structure to penetrate CELL WALLS

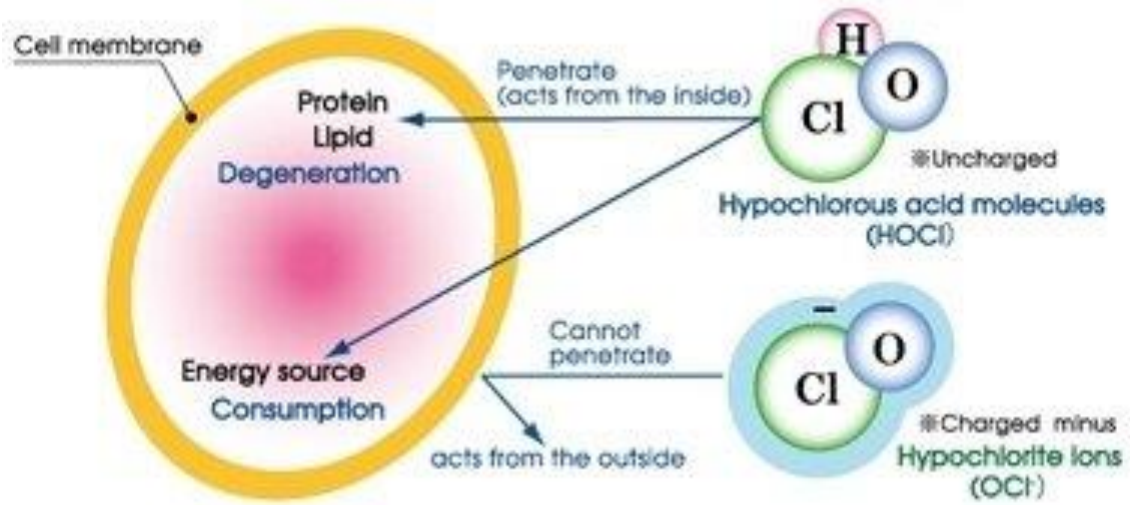
- HOCl is a WEAK ACID
- At a pH of 4 – 8.5 most available Chlorine is HOCl

NO RESIDUE after dissolving in water

- Solution stays active for
7 – 10 DAYS



Hypochlorous Acid (HOCl)



hypochlorousacid.com/about

- HOCl diffuse through cell membrane
- Without a polar charge it is not repelled
- OCl⁻ (BLEACH) is unable to penetrate cell membrane due to **negative charge**
- Bleach can only clean on the EXTERIOR
- HOCl acts from INSIDE

atm plus most effective disinfectant in the chlorine family

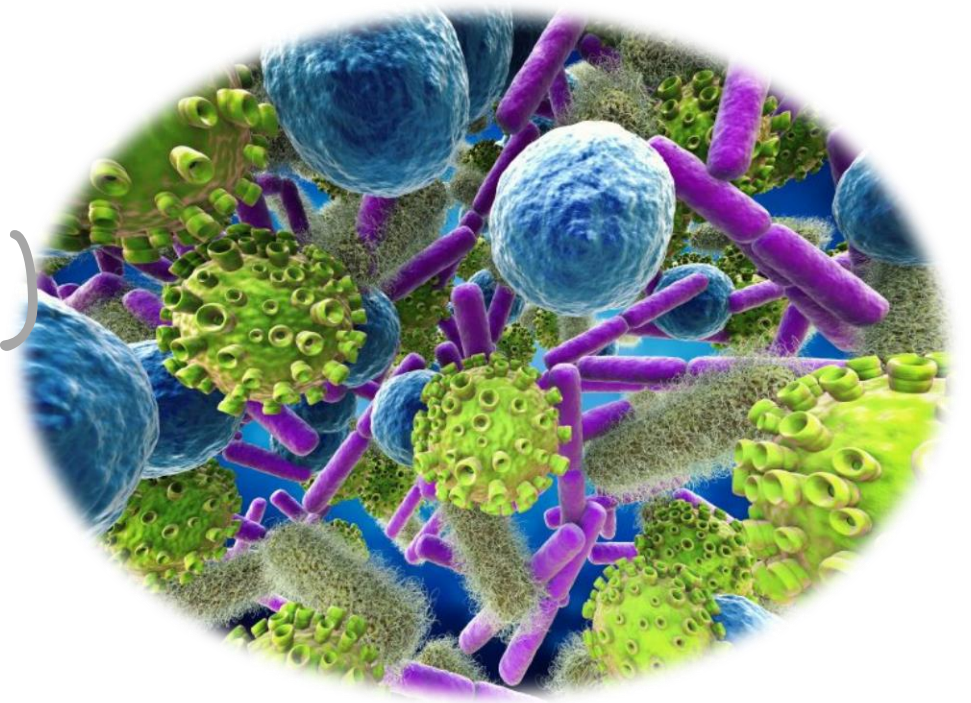


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NATURE of Hypochlorous Acid (HOCl)

- Natural component of our own immune systems
- Fights against infection
- Reduces inflammation
- Bio-degradable in the environment

atm plus organic, lethal, cost effective



**“Hypochlorous acid is
LETHAL to every pathogen
it has been tested against
but completely HARMLESS
to humans and other
mammals.”**

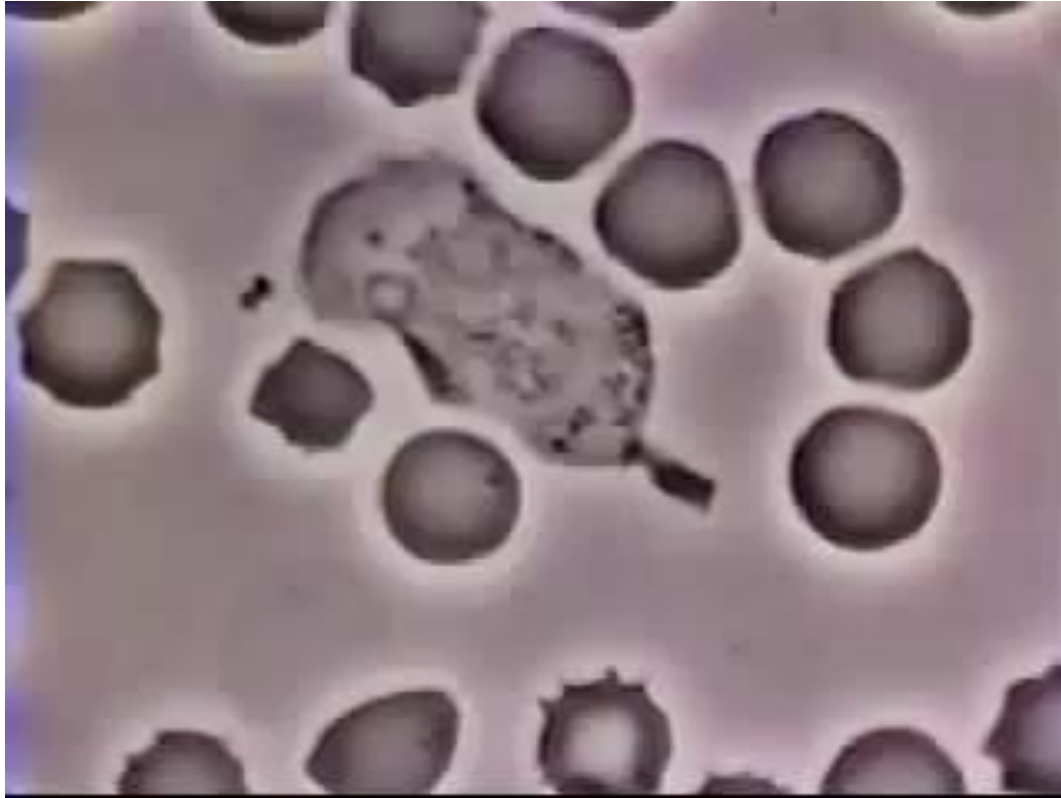


phagocytosis

[fag-uh-sahy-toh-sis]

noun

Physiology. the ingestion of a smaller cell or cell fragment, a microorganism, or foreign particles by means of the local infolding of a cell's membrane and the protrusion of its cytoplasm around the fold until the material has been surrounded and engulfed by closure of the membrane and formation of a vacuole: characteristic of amoebas and some types of white blood cells.



- Neutrophils (WHITE BLOOD CELLS) seek out pathogens (VIRUSES AND BACTERIA) and destroy them using HOCl
- HOCl causes necrosis (RUPTURING OF THE CELL) and destroys the cell contents
- While disinfecting, HOCl is {OXIDISED} and consumed
- The only by-product is slightly salty water



EFFECTIVENESS OF HOCl

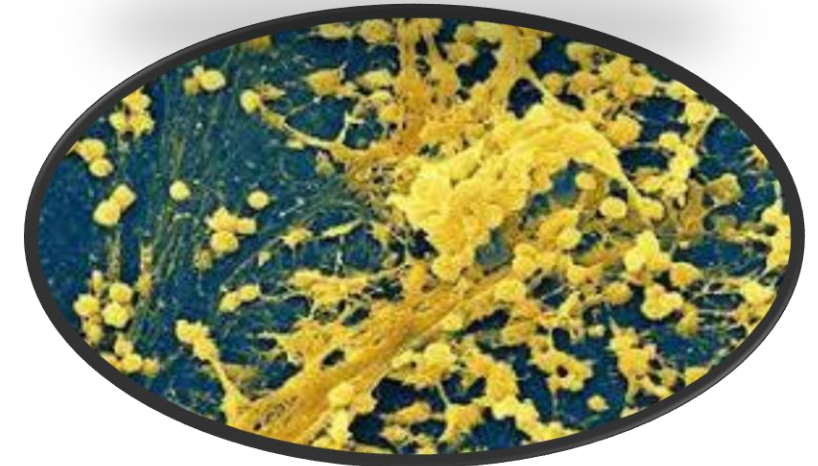
atm plus

disinfects and destroys:

- ✓ VIRUSES
- ✓ BACTERIA
- ✓ MOULDS
- ✓ FUNGI
- ✓ SPORES
- ✓ BIOFILMS

defends against:

- ✓ INFECTION
- ✓ RESISTANCE/TOLERANCE
- ✓ PATHOGENS BENEATH BIOFILMS
- ✓ FERMENTATION IN STORAGE



atm plus

80 – 100 times more effective than bleach



Eco Utility Systems

PROVEN EFFECTIVE AGAINST SARS-CoV-2

The latest peer approved scientific papers conclusively show that **HOCL effectively kills the SARS-Covid 2 virus**. The papers also compare HOCL to other disinfectants showing its comparative performance with other disinfectants such as bleach.

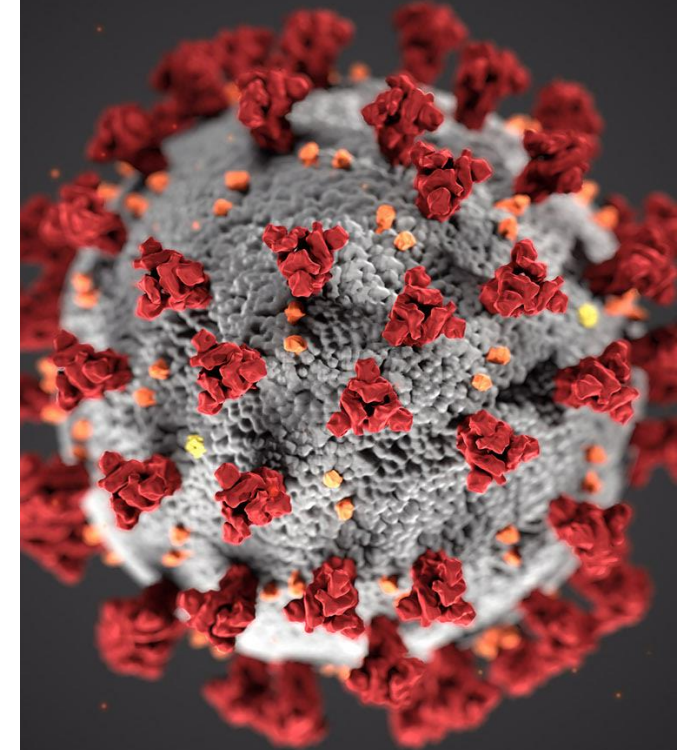
Chan K-H, Sridhar S, Zhang RR, Chu H, Fung AY-F,
Chan G, Chan JF-W,
To KK-W, Hung IF-N, Cheng VC-C, Yuen K-Y,
Factors affecting stability and infectivity of SARS-
CoV-2,
Journal of Hospital Infection,
<https://doi.org/10.1016/j.jhin.2020.07.009>.

‘The surgeon needs to have an **inexpensive, available, nontoxic, and practical** disinfectant that is effective in sanitizing against the COVID-19 (Coronavirus Disease 2019) virus.’

‘The results indicate that this material can be used with a **high predictability** for disinfecting against the COVID-19 (Coronavirus Disease 2019) virus.’

Michael S. Block, Brian G. Rowan,
Hypochlorous Acid: A Review,
J Oral Maxillofac Surg,
10.1016/j.joms.2020.06.029

atm plus 80 – 100 times more effective than bleach



Eco Utility Systems

atm plus

the effervescent tablet



HOCl concentrated into a 6 gram dissolvable tablet

1 tablet = 12.5l of disinfectant

consistent solution at 100PPM every time

active for 7 – 10 DAYS after dissolving
then returns to pure water

easy STORAGE

low TRANSPORT COSTS

1 year SHELF LIFE in tablet form

atm plus

effective at 25PPM to 200PPM depending on use



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USES of atm plus

to name a few...

- DISINFECTING any and all surfaces
 - fresh fruit / veg preparation
 - hydroponics / irrigation
- AGRICULTURAL
 - pesticidal treatment
- LIVESTOCK
 - control / reduction of disease
 - improves digestion / feed conversion ratios
 - increase livestock yields
- MEDICINAL / DENTISTRY
 - mouthwash / wound care
 - waterline disinfection
 - scrubbing in

atm plus 100% organic, bio-degradable, MRL FREE



USES of atm plus

to name a few...

- HORTICULTURE
 - increase shelf life
 - reduces rotting / infection
- WATER TREATMENT
- FACILITIES
 - shopping centres
 - accommodation
 - office buildings
- TRANSPORT
 - airlines / airports
 - public transport
 - shipping / cruiseliners

atm plus safer exposure to humans than regular disinfectant



atm plus:

GENERAL USE

atm plus CAN BE USED TO CLEAN AND SANITIZE:



- Floors and walls
- Preparation areas
- Workers' hands, clothes and shoes
- Food contact surfaces



'As a Disinfectant/Sterilant, HOCl has greater killing power than Chlorine, Chlorinated Water, Chlorine Dioxide, Sodium Hypochlorite, Hydrogen Peroxide and Ozone'

atm plus

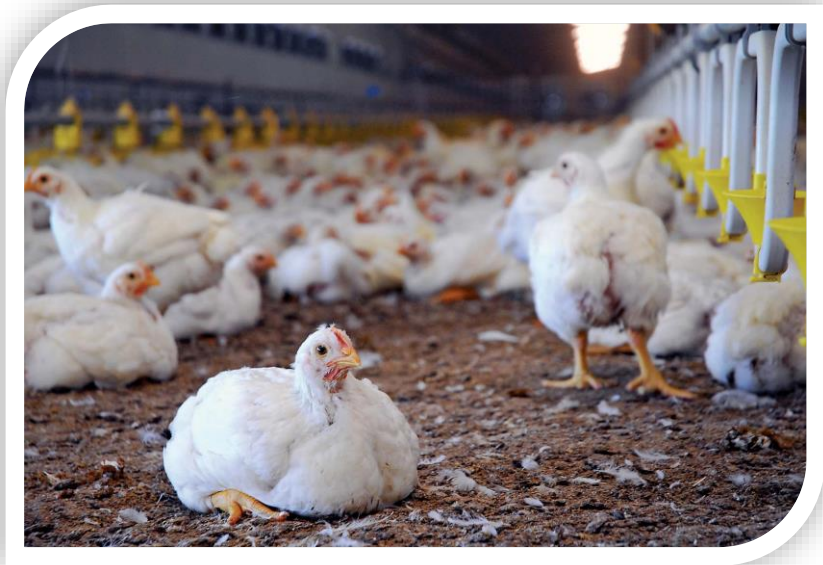
gentle, effective, safe – NO PPE NECESSARY



Eco Utility Systems

atm plus:

POULTRY



POULTRY

- Elimination of the requirement to purchase and store toxic, man-made sanitizing and disinfecting chemicals
- Control de-feathering by fog-misting – IT DESTROYS AEROBIC AND ANAEROBIC BACTERIA
- Disinfection of feed – TO KILL MICROBIAL PATHOGENS
- Better digestion and feed conversion ratio
- Disinfection of drinking water

'As a Disinfectant/Sterilant, HOCl has greater killing power than Chlorine, Chlorinated Water, Chlorine Dioxide, Sodium Hypochlorite, Hydrogen Peroxide and Ozone'

atm plus reduces overall mortality rates



Eco Utility Systems

atm plus:

POULTRY

GENERAL SANITIZING

Fogging and spraying the building interior will:

- Encapsulate and kill bacteria and other microbial pathogens
- Remove odours
- Bind dust and encompassed bacteria
- Improve quality of breathing air



'The use of HOCl {neutral anolyte} provides the poultry farm with an absolute perfect hygiene status'

atm plus litter and manure can be sprayed daily for microbial and odour control



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atm plus:

POULTRY



DRINKING WATER

- Purification of drinking water systems – DESTRUCTION OF BIOFILM BUILDUP AND ALGAE IN PIPES
- Pathogens do not develop a resistance to HOCl – BIOFILM AND ALGAE DO NOT REOCCUR
- Prevention of clogged drinking nozzles
- Removes LIME SCALE and MINERAL DEPOSITS
- Coliform bacteria is prevented from being conveyed by the birds

'Poultry will, on average, consume twice as much water as any other substance.'

atm plus eliminates contamination from water sources and the environment



Eco Utility Systems

atm plus:

POULTRY

DESTRUCTION OF BIOFILM AND SCALE IN WATERING SYSTEMS



atm plus recommended use at 100 - 200PPM



Eco Utility Systems

atm plus:

POULTRY

DESTRUCTION OF BIOFILM AND SCALE IN WATERING SYSTEMS



atm plus recommended use at 100 - 200PPM



Eco Utility Systems

atm plus:

POULTRY

ORP Level	Coliform count in 100 ml of water
200	300
300	36
400	3
600	0

- Continuous injection of 2 – 3% of HOCl solution is sufficient to kill all pathogens
- Anolyte has a residual biocidal effect that stays active in the system for CONTINUAL SANITATION
- High ORP (Oxidation-Reduction Potential) of HOCl in the water has more ability to DESTROY foreign contaminants
- There is a direct relationship between the ORP level and the Coliform count in water.
- HOCl has an ORP of **+600 to +1200mV**
- Kills **100%** of choliform bacteria in **30 seconds**

'Adding HOCl to the drinking water improves animal health and increases weight gain'

atm plus does not change the characteristics of drinking water



atm plus:

POULTRY



EFFECTIVE AGAINST:
Not limited to..

Diseases

- Bordetellosis
- Coryza
- Blue Comb
- Salmonella
- Cholera
- New Castle
- Intestinal Tract Enteritis

atm plus

sans 51276 (BACTERIA) sans 51650 (FUNGUS) sans 51650 (SPORES) en 1276 (VIRUS)



Eco Utility Systems

atm plus:

POULTRY



FOOD PRESERVATION:

- HOCl is used for food preservation without affecting the quality of the grain
- Added acidity inhibits 'breathing' of the grain
 - This results in preservation of vitamins that usually disappear when temperatures are higher than 50 °C
- Birds grow faster as they can utilize feed more efficiently –
MORE RAPID WEIGHT GAIN

'Common performance indicators show a reduction in number of days 'on feed' to achieve the same bird mass.'

atm plus 18 liters sprayed over 1 ton of feed for optimal disinfection



Eco Utility Systems

atm plus:

POULTRY



EGG PRODUCTION

Laying hens that consume drinking water disinfected with HOCl {atm plus} has:

- Higher egg per bird average – UP TO 6% INCREASE
- Better shell quality – DECREASE IN EGG BREAKAGE
- Improved egg mass – UP TO 6g HEAVIER PER EGG

Eggs that are immersed in HOCl {atm plus} solution for **5 minutes**

- Prevents Salmonella from penetrating eggs in first 3 days
- Destroys existing traces of Salmonella

atm plus

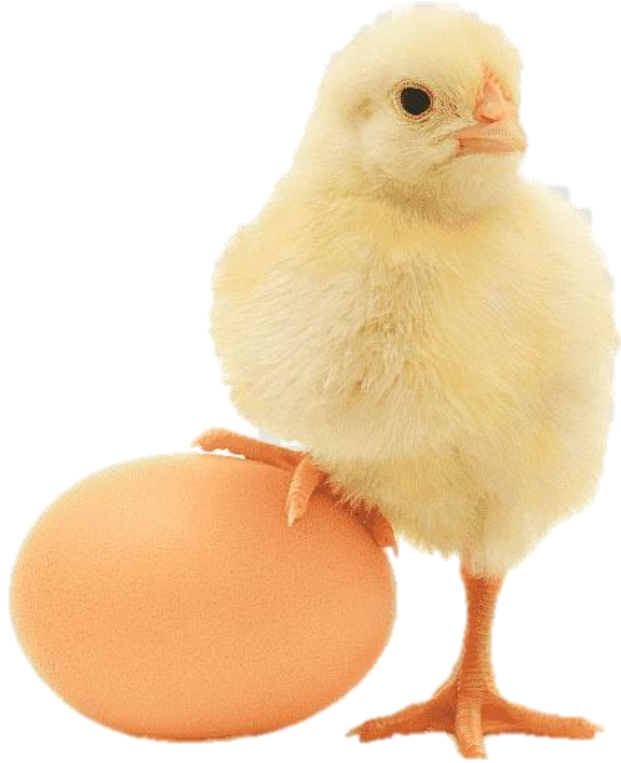
Recommended use 100PPM



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atm plus:

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BENEFITS FOR POULTRY FARMING

- Better overall flock **HEALTH**
- Lower **MORTALITY** rate
- Less **BRONCHITIS** outbreaks
- Lower average **MEDICINAL** costs
- Better health of staff – No exposure to unnecessary chemicals

atm plus pH will play a significant role



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