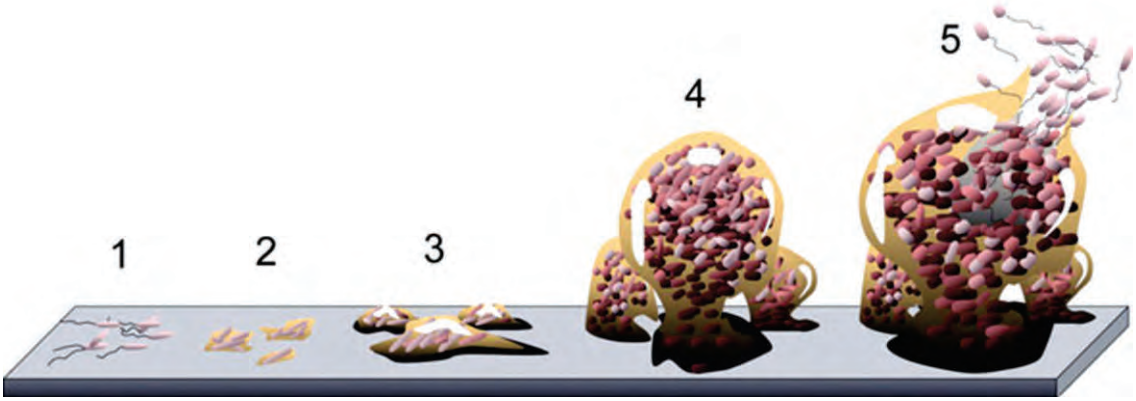
POULTRY

Application & Dosage

KEY BENEFITS OF USE

- Lower mortality rates
- Improves feed conversion ratio
- Unprecedented biofilm removal
- Improved profits and performance
- Reduces antibiotic burden
- Improved daily weight gain
- Improved health and immune system
- Easy to use, automated dosing

UNDERSTANDING BIOFILM



Step 1. Free-swimming bacterial cells alight on a surface, arrange themselves in clusters and attach.

Step 2. The collected cells begin producing a protective gooey matrix (EPS)

Step 3. The cells signal one another to multiply and form a micro-colony.

Step 4. Chemical gradients arise and promote the coexistence of diverse species and metabolic states.

Step 5. The biofilm reaches a critical mass and disperses bacteria, ready to colonize other surfaces

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Cleaning is more important than disinfection. To prevent animals from getting ill due to water contaminants, it is very important to remove biofilm from drinking water systems. Adding medicines, vaccines and nutritional supplements to drinking water provides nutrients for biofilm to proliferate, resulting in the pathogenic pollution of drinking water. Biofilm is the breeding ground for microorganisms. Removing the biofilm removes 99% of all microorganisms resulting in clean safer water. Under optimal conditions, 2 microorganisms will multiply to over a billion in 13 hours.

Recommended Disinfecting Protocol

It is important to determine a microorganism baseline. To achieve this, an inexpensive microbiological testing is required. This is called a cfu test. (cfu = Colony Forming Units).

The most common water storage and supply setups are as follows:

i) Ground or borehole water into;
ii) Filtration system into;
iii) Storage tank system into;
iv) Piping system into poultry house.

Test 1 - A measure of cfu's of ground water before filtration. *This determines the pathogenic profile of your source water. Depending on the time of year and level of ground water, these values will change.*

Test 2 **-** A measure of cfu's after the filtration system. *This determines how effective your filtration system actually is.*

Test 3 **-** A measure of cfu's after the storage tank system. *This determines if there is a microorganism build up in the tank or pipes between the filtration system and tank.*

Test 4 **-** A measure of cfu's at the furthest pipe point from the tank. *This measurement should be carried out on day 3 after tank & pipe disinfection and then on day 30, to determine the extent of biofilm in the piping system. Any cfu value less than 100 is acceptable.*

The micro results will determine how effective your disinfecting protocol is. Without these results you are effectively working in the dark.

Water & Tank disinfection (No animals present)

Without microbiological results, it is recommended that the system receive a shock dosage to effectively remove any potential biofilm buildup. Without testing this should be repeated periodically throughout the year interspersed with regular dosage directions.

Shock dosage = 3% (Add 3L Peroxsil Ag+ to 100L water)
Regular dosage = 1% (Add 1L Peroxsil Ag+ to 100L water)

The Application:

1. *Close the stop-valve to the tank*
2. *Empty the entire drinking system, tank & pipes.*
3. *Calculate the water content of the entire drinking system.*
4. *Fill the tank with as much water as the entire drinking system requires.*
5. *Add 1 or 3% of* Peroxsil Ag+ *to the water tank.*
6. *Fill the piping system and open the stop-valves at the end of each drinking line.*
7. *Push all drinking nipples for just a second to let the solution clean the nipple.*
8. *After 24 hours, flush the drinking lines with fresh water.*
9. *Repeat the flushing process twice or longer if biofilm particulate is still being ejected from the pipes.*
10. *Push all drinking nipples again.*
11. *The drinking system is now clean and should be repeated after every bird rotation +-33 days.*

If no constant dosing system in place.

A weekly maintenance dose should be added only after the completion of additive vaccines, medication or additives. Use 100 ml Peroxsil Ag+ *per 1000 litres of water for 24 hours.*

If a constant dosing system is utilized.

Add 50 ml Peroxsil Ag+ *per 1000 litres of water, then set doser to ensure that the system remains at 35ppm with the use of Peroxide test strips. The ppm can be adjusted to 15ppm based on micro testing results after 30 days.*

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Water & Tank disinfection (Animals present)

10 day- schedule

Over a period of ten days the dosage of Peroxsil Ag+ is built up from 10 ml to 25 ml per 100 litre water. This results in slow removal of biofilm reducing the blockage of drinking nipples.

Days 1-2 Add 10ml Peroxsil Ag+ per 100L of water.
Days 3-4 Add 15ml Peroxsil Ag+ per 100L of water.
Days 5-6 Add 20ml Peroxsil Ag+ per 100L of water.
Days 7-10 Add 25ml Peroxsil Ag+ per 100L of water.

If there is a low water flow or even a blockage of the drinking line you have to react immediately with a high dosage of Peroxsil Ag+.
Lift the drinking lines if possible and turn off lights. Birds must not have access to the water nipples during this process.
Empty the piping system and fill with 5% solution of Peroxsil Ag+. Leave for at least 3 hours. Flush the system to see if the problem has been resolved. If not, then repeat the procedure.

If no constant dosing system in place.

A weekly maintenance dose should be added only after the completion of additive vaccines, medication or additives.
Use 100 ml Peroxsil Ag+ per 1000 litres of water for 24 hours.

If a constant dosing system is utilized.

Add 50 ml Peroxsil Ag+ per 1000 litres of water, then set doser to ensure that the system remains at 35ppm with the use of Peroxide test strips. The ppm can be adjusted to 15ppm based on micro testing results after 30 days.

HABITAT SURFACE DISINFECTION

Using soap and water and wash floors and walls aggressively. Thereafter rinse with clean water thoroughly as soap neutralises disinfectants. Use a 3% solution, add 30ml of **Peroxsil Ag+** per litre of water, and apply to the cleaned surfaces. Allow to stand for 45 min or until dry. Do not rinse.

High pressure sprayers can disperse pathogens and make them airborne, settling in inaccessible areas. Use with caution.

Understanding How much to use

The usage directions are a guide based on general usage conditions and laboratory efficacy studies.

Some microbes are neutralised in a few minutes and others can take hours. However if the total CFU count remains below 100, this is good. Above 500 indicates a serious problem. Trying to identify each and every microorganism is not only costly but unnecessary.

Peroxsil's ability to disinfect microbes is highly dependant on many factors, the most influential of which is a pathogens ability to rebuild a biofilm colony. The larger the biofilm contamination the more disinfectant will be required to neutralize the threat.

It is for this reason we recommend period CFU testing to establish whether your disinfecting protocol needs adjustment. For example a continued dosing at 35ppm of hydrogen peroxide is acceptable but if you are able to reduce this to 15ppm you will be saving on unnecessary costs, the reverse is also true, adding too little can result in sick birds.

Each positively charged oxygen molecule will kill a negatively charged pathogen and each positively charged pathogen will be neutralized by the silver ion. The heavier the microbial load, the more oxygen will be utilized.

For biofilm removal a 1% solution is adequate in a clean system over 24 hours, however a heavily contaminated system will require at least a 3% solution over the same period. If you wish to reduce the treatment time, increase the % dilution to 5 or 7%.
In the end it boils down to cost management.

Neither chlorine or standard hydrogen peroxide is able to penetrate biofilm. There is a body of evidence that supports this.

Peroxsil Ag+ is a registered product Act5GNT529/275464/130/0992