Alternative to Formalin Fumigation in Fertile Eggs

INTRODUCING PEROXSIL^{Ag+} (SSHP)

A SAFER, SMARTER WAY TO DISINFECT FERTILE EGGS

Formalin fumigation has long been the go-to method for sanitising hatching eggs on breeder farms. While effective, it comes with well-known health risks for staff and demands strict environmental controls to work consistently. Variations in temperature or humidity can easily compromise performance.

PeroXsil®, a silver-stabilized hydrogen peroxide (SSHP), offers a powerful new approach. It delivers high-level disinfection without the hazardous fumes or reliance on controlled conditions. Unlike formalin, PeroXsil® remains effective regardless of temperature or humidity, making it a reliable, practical solution for real-world farm environments.

Safe to handle when diluted and breaking down into only water and oxygen after use, PeroXsil® protects both your people and your productivity - without compromising hygiene standards. It's egg sanitation, simplified.

It's time to modernise your disinfection protocol – safely, consistently, and with confidence.

WHY LOOK FOR AN ALTERNATIVE?

FEATURE	FORMALIN FUMIGATION	PEROXSIL^{Ag+} (SSHP)
Effective Egg Disinfection	✔ Yes	✔ Yes
Health Risk to Staff	✘ High (toxic fumes, carcinogen)	✔ Low (safe when diluted)
Breaks Down Safely	✘ No (leaves toxic residues)	✔ Yes (into water and oxygen)
Requires Special Infrastructure	✘ Yes (fumigation chamber, controls)	✔ No (easy application, no chamber needed)
Sensitive to Temp/Humidity	✘ Yes	✔ No
Consistent Results	✘ Often Variable	✔ Reliable under farm conditions
Environmental Safety	✘ Harmful	✔ Eco Friendly

OUTSTANDING RESULTS FROM SOUTH AFRICAN TRIALS: PEROXSIL® DRAMATICALLY REDUCES EGGSHELL CONTAMINATION

Recent trials conducted in South Africa have revealed the exceptional efficacy of PeroXsil® in reducing bacterial load on hatching eggs. Left untreated, fertile eggs carried an average of 49.6 bacteria per shell. Surprisingly, even a rinse with clean water increased this number to 55.8 bacteria per shell, confirming that water alone is not an effective decontaminant.
In stark contrast, eggs treated with PeroXsil® showed a dramatically reduced bacterial count - just 2.6 bacteria per shell.
This represents a reduction of over 90%, making PeroXsil® a highly effective, non-toxic alternative to traditional methods.

Trial Findings:
- Untreated eggs: 49.6 bacteria/eggshell
- Water-rinsed eggs: 55.8 bacteria/eggshell
- PeroXsil®-treated eggs: just 2.6 bacteria/eggshell

These findings highlight that the real impact comes not from water rinsing, but from the advanced disinfection action of PeroXsil®. With its silver-stabilized hydrogen peroxide formulation, PeroXsil® provides reliable pathogen control without compromising embryo viability.

SOUTH AFRICAN TRIALS CONFIRM: PEROXSIL® ELIMINATES BACTERIAL CONTAMINATION – EVEN ON DIRTY EGGS

Further trial work in South Africa has demonstrated the remarkable effectiveness of PeroXsil®, even under conditions of heavy contamination. Eggs collected in a visibly dirty state showed extremely high levels of surface bacteria - averaging 98.2 bacteria per shell. Simply rinsing with water proved ineffective, failing to significantly reduce this burden.

However, treatment with PeroXsil® reduced contamination to zero detectable bacteria on the shell - delivering total surface disinfection.

Crucially, the benefits extended beyond the shell. Bacterial counts in the egg contents themselves dropped dramatically - from an average of 6.75 CFUs to just 0.5 CFUs following PeroXsil® treatment.

These findings clearly demonstrate that cleaner shells mean cleaner contents, helping to reduce the risk of contamination and supporting the production of safer, higher-quality hatching eggs.

Trial Findings:
- Dirty eggs: 98.2 bacteria/eggshell
- PeroXsil®-treated eggs: Zero detectable bacteria
- Egg content contamination: Reduced from 6.75 CFUs to 0.5 CFUs

With its powerful silver-stabilized hydrogen peroxide formulation, PeroXsil® provides reliable, residue-free disinfection, making it the ideal solution for egg producers committed to hygiene, safety, and quality.

HOW DOES PEROXSIL® COMPARE TO FORMALIN? SOUTH AFRICAN TRIALS REVEAL A CLEAR ADVANTAGE

Both PeroXsil® and formalin fumigation were evaluated for their ability to reduce bacterial contamination on hatching eggs. Untreated eggshells showed heavy bacterial loads, with many samples recording up to 100 colony-forming units (CFUs) per shell - and in some cases, exceeding the measurable limit of 101 CFUs.

Following treatment, both methods reduced contamination, but a clear difference in efficacy emerged. While formalin-treated eggs continued to show high bacterial counts - and in one trial site, little to no improvement - PeroXsil® consistently eliminated bacteria, bringing levels down to near or completely undetectable on many eggs.

Further laboratory analysis confirmed that although bacterial contamination was consistently high before treatment, PeroXsil® outperformed formalin, delivering significantly lower post-treatment counts. On average, PeroXsil® reduced contamination to just 4 viable bacteria per shell, with superior consistency across all samples.

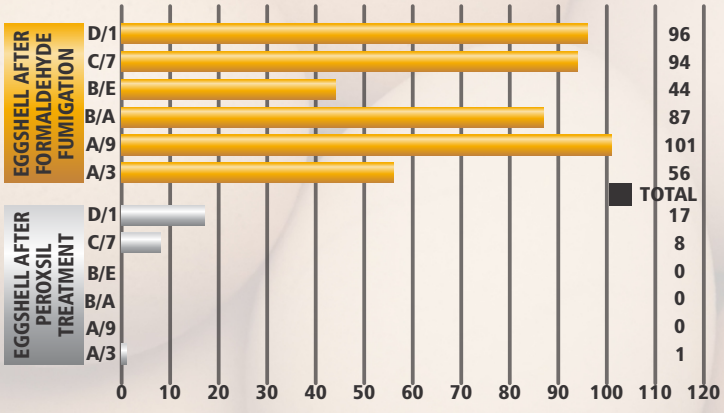
Trial Findings:
- Untreated eggs: Up to 100+ CFUs/eggshell
- Formalin-treated eggs: Variable results, some with high residual contamination
- PeroXsil®-treated eggs: Average of just 4 CFUs/eggshell

While the trial did not assess the fumigation process itself, results clearly showed that PeroXsil® delivers more reliable and more effective bacterial control - without the risks or residues associated with formaldehyde use.

With its advanced silver-stabilized hydrogen peroxide formulation, PeroXsil® matches or exceeds the performance of formalin, providing a safer, non-toxic alternative for modern hatchery hygiene.

SSHP IS AS EFFECTIVE AS FORMALIN FOR EGGSHELL DISINFECTION

AVERAGE BACTERIAL LOAD ON EGGSHELLS AFTER TREATMENT (n=20)



DO EGGS STAY CLEAN AFTER TRANSPORT & GRADING? PEROXSIL® PROVES ITS LONGER LASTING PROTECTION

South African trials extended beyond disinfection at the source, evaluating how well eggs remained clean after transport and grading. A total of 160 eggs - previously treated at production sites - were tested upon arrival at the hatchery.

The results were clear: eggs treated with PeroXsil® consistently showed lower bacterial counts on the shell compared to those treated with formalin. What's more, these low contamination levels were maintained throughout storage, right up until the point of setting.

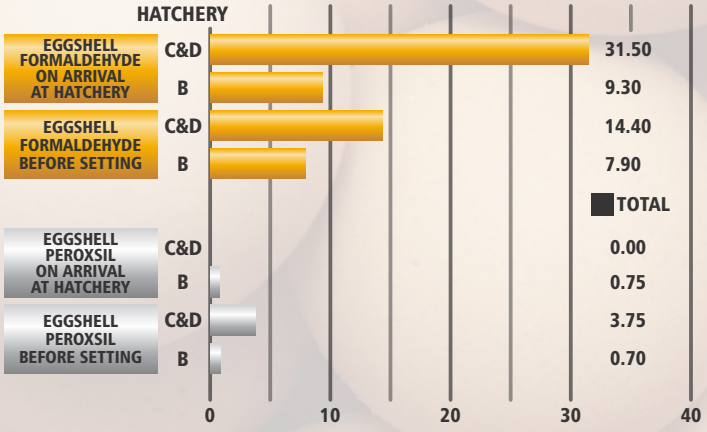
This confirms that PeroXsil® not only delivers immediate bacterial reduction but also provides residual protection - helping to safeguard egg hygiene throughout the entire supply chain.

Trial Findings:
- Eggs tested upon hatchery arrival: 160 samples
- PeroXsil®-treated eggs: Lower bacterial counts than formalin-treated eggs
- Bacterial levels remained low until setting

These findings reinforce PeroXsil® as a dependable solution for maintaining egg cleanliness, even after handling, transport, and storage - critical steps in the hatchery process where contamination risks often rise.

With lasting antimicrobial protection and proven field performance, PeroXsil® helps ensure safer, cleaner hatching eggs from farm to incubator.

EGGSHELLS TREATED WITH SSHP REMAIN CLEAN AFTER TRANSPORT TO THE HATCHERY

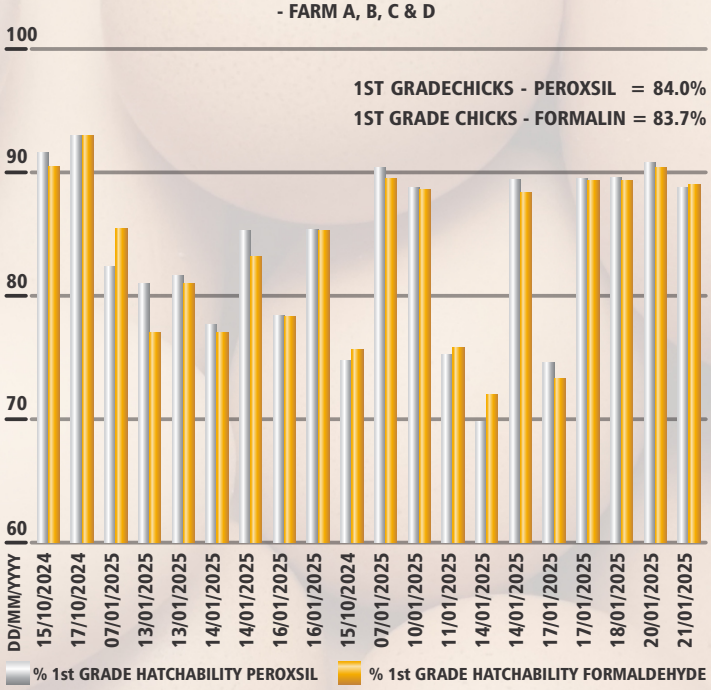


DOES PEROXSIL® AFFECT HATCHABILITY? BETTER HYGIENE, BETTER RESULTS

As part of the extensive South African trials, the impact of PeroXsil® on hatchability was assessed across four different farms. Eggs were divided into groups and treated with either PeroXsil® or traditional formalin fumigation, then monitored throughout the hatching process.
Over the course of 20 hatch cycles, approximately 377,000 eggs were treated with PeroXsil®, while 420,000 eggs underwent formalin fumigation.
The results were compelling: PeroXsil® consistently delivered better hatchability outcomes. In 15 out of the 20 direct comparisons, hatch rates for first-grade chicks were higher in the PeroXsil®-treated group.
The average hatch rate for first-grade chicks reached 84.02% with PeroXsil®, compared to 83.70% with formalin, confirming that PeroXsil® supports, and even improves, hatch performance.
Trial Findings:
- Eggs treated with PeroXsil®: ~377,000
- Eggs treated with formalin: ~420,000
- Higher first-grade chick hatchability in 15 of 20 comparisons
- Average hatch rate: 84.02% (PeroXsil®) vs 83.70% (Formalin)

These findings confirm that reducing bacterial contamination on eggshells improves hatchability, and PeroXsil® delivers this benefit reliably - without the health and handling risks associated with formaldehyde.
With performance that equals or exceeds formalin, PeroXsil® offers producers a safer, effective alternative that supports both hygiene and hatch success.

SSHP HAS NO NEGATIVE EFFECT ON HATCHABILITY



HOW IT'S USED: SIMPLE, PRACTICAL APPLICATION FOR RELIABLE RESULTS

Using PeroXsil® in the field is straightforward and effective - making it easy to integrate into existing hatchery or farm routines. The product is diluted at a ratio of 1:64 in clean tap water, resulting in a working solution containing 0.78% silver-stabilized hydrogen peroxide.

Application is simple and efficient: the solution is sprayed directly onto the eggs using a handheld battery sprayer or knapsack sprayer, ensuring thorough coverage without causing damage or moisture pooling.

On average, around 350 mL of solution is used per tray of 150 eggs, delivering consistent disinfection with minimal waste.

Usage Summary:
- Dilution: 1:64 in clean tap water (0.78% silver-stabilized hydrogen peroxide)
- Application: Sprayed directly onto eggs using handheld or knapsack sprayers
- Volume: Approx. 350 mL per tray of 150 eggs

With its ease of use and proven efficacy, PeroXsil® offers a practical, scalable solution for egg hygiene, from production sites to hatcheries.

WHY SWITCH TO PEROXSIL®!

FEATURE	KEY BENEFIT
Safe	No hazardous fumes, making it safer for breeder farm workers and eggs.
Simple	Easy-to-use Spray Application - no complex fumigation process required
Effective	Proven results in real farm conditions, reducing bacterial contamination.
Conistent	Works reliably across different environments and breeder farm conditions.
Hatch Friendly	Supports high quality chick production with clean, healthy eggs.

PEROXSIL®
COMPREHENSIVE WATER HYGIENE & SANITATION

www.peroxsil.com

DIAG
POULTRY

HEAD OFFICE ADDRESS: 9 -11 Vervoer Street, Kya Sand, 2190
Head Office : +27 10 500 0365 / Internal Sales : 086 100 5424
Email : info@diagpoultry.co.za / sales@diagpoultry.co.za

SALES REPRESENTATIVES

Gavin Tintinger +27 71 782 5195	Amanda van Zyl +27 82 891 1224	Theresa Lubbinge +27 60 884 7727
Prettys Murudi +27 82 314 3198	Ulandi Venter +27 72 147 0272	Bulelwa Mabunda +27 61 542 0651

DEPOT ADDRESS: 6 Ada Street, Adamayview, Klerksdorp
Tel : 072 147 0213

BUSINESS HOURS
Monday to Thursday | 08h00 -16h30
Friday | 08h00 - 16h00