

CREDENCE® Biosecurity & Outbreak Clean-Up Programme - Poultry



Control of diseases in the poultry industry is necessary for compliance with consumer, retail and regulatory demands, and for increased profitability and to prevent breakouts of diseases, such as HPAI.

Good animal husbandry and effective control of environmental conditions are vital for producing healthy, disease-free animals. This can only be achieved by having clearly defined and effective biosecurity programs. These need to be ideally based on preventative measures rather than curative reactions to outbreaks, for maximum security and profitability.

Implementation of effective disinfection for these programs is of paramount importance. Two basic program criteria must be met. Disinfection must be:

- practical,
- easy to understand, use and implement
- use proven, wide-spectrum disinfectants
- demonstrated in independent trials to kill relevant pathogens
- Be effective against hard-to-kill pathogens, such as enveloped viruses and biofilm-producing or encysted bacteria.

The **Hazard Analysis Critical Control Point** (HACCP) system is internationally recognised for providing the most secure method of designing and implementing food safety programs, from farm to fork. The system follows seven basic principles, which identify, monitor and control potential hazards in the food safety chain. These seven principles are:

1. Conduct a hazard analysis by identifying all potential food safety hazards at each step in the production process.
2. Identify the points in the process which are critical for control and monitoring – these are known as **Critical Control Points** (CCP).
3. At each identified CCP the critical control limits are established and set e.g. water temperature, *Salmonella* spp. count etc.
4. Monitoring procedures are established to ensure that the critical limits established at each control point are being met.
5. Procedures are implemented to take corrective action when a critical limit goes out of control.
6. Verification procedures are established to ensure that the system is working properly.
7. Documentation is necessary to record the proof of effectiveness of the system.

The CREDENCE DISINFECTION PROGRAM has been designed and validated to be consistent with HACCP system principles, by addressing the disinfection needs at critical control points in poultry production. It allows simple, daily testing and monitoring on-farm to make record keeping easy.

This disinfection program covers:

- Safe drinking water.
- Routine/daily disinfection routines
- Terminal disinfection between production cycles for broiler, breeder, layer and turkey finishing facilities
- Egg disinfection, incubators and hatcheries
- Provides a comprehensive guide to optimal concentrations for all uses.

DRINKING AND FARM WATER

Water is the most important nutrient for poultry development, but the monitoring and provision of safe drinking water is often overlooked. Disinfection of farm water is vitally important to ensure the health of the flock. Studies show that CREDENCE treated water ensures less mortality, improved weight gain, better feed conversion ratios, improved laying performance and egg quality.

Other water sanitisers increase water pH to levels exceeding 8.0 (e.g., chlorine dioxide raises water to pH 8.4), which is the maximum global standard level allowed for animal or human drinking water. This is because high pH water restricts the activity of digestive enzymes and prevents uptake of minerals, especially calcium, in the gut. In poultry this significantly increases skeletal deformities, welfare culling and poor shell formation.

CREDENCE maintains drinking water at a maximum of pH7.8, which does not interfere with such vital processes.

THE CREDENCE ADVANTAGE

- Demonstrable results against pathogens from independent laboratories
- Cost effective
- Easy to measure, apply, store and use
- No prior preparation required
- pH in water maintained below 8.0 for bird health
- Fast 'kill time' meets fastest legal recommendation of 15 min contact
- No liquids – cheaper freight and less storage area
- Easy to assay using commercial chlorine sticks
- Regulatory and technical support, including biosecurity protocols
- Meet quality standards (GMP, ISO9002, FDA, UN reg., WCB) and HACCP
- Low corrosion compared to other commercial disinfectants.
- Safe for humans and animals
- Low odour
- Ensures deposit-free pipework.
- Effective against biofilm buildup



All water, whether for drinking or cleaning, should be continuously disinfected, either by hand dosing or by the use of auto-dosing systems (details of which are available from Anpario UK). The water is dosed to a sufficient level to achieve a residual 'free available chlorine' level of ~0.5 ppm (mg/litre) at the last drinking water point in the line.

The 'free available chlorine' level can be simply measured by using commercial Free Chlorine Test Strips. Where the residual 'free available chlorine' level cannot be measured, then a dosage of 1.5 to 3 ppm has been shown to be effective in clear water, and 4 to 6 ppm in dirty water. This will keep the water disinfected and help prevent the build up of biofilm and algae.

The entire water system should always be kept under positive pressure, with the pipework always full of treated water. The concentrations at 1 tablet per 1000 litres has been tested to show it covered all grades of farm water effectively.

Trials have shown that many pathogens are reintroduced after disinfection, due to washdown with infected water sources, from bores, roof collections and dams. CREDENCE is safe enough not to require such extensive wash down, a major saving on water supplies on farm. However, all farm water should be treated with CREDENCE to prevent reinfection through this and any other vectors.

When administering medication, (vaccines/antibiotics etc.) via drinking water, CREDENCE can be neutralised, where necessary. Several products (liquids and tablets) are available for the neutralisation of chlorine in drinking water. These products may colour the water, which is useful as it shows when the medicated water comes on- and off-line. Always use a proven source of uncontaminated water or neutralize the chlorine for such administrations to prevent accidental infection of other pathogens to the animals.

ROUTINE/DAILY BIOSECURITY

Foot baths:

- All personnel should use footbaths at the entrance point to each house, and on leaving the site.
- Use CREDENCE at a dosage of **1 tablet per 5 litres** and replenish regularly (at least twice per week).

Hand washing:

- Personnel should wash their hands when moving between groups of animals, before egg collection and on arrival and departure.
- Use CREDENCE at a concentration of **1 tablet per 100 litres**, and replenish regularly (at least twice per week).

Vehicles:

- Wheel washes/dips should be provided for entrance and exit to the site. If a suitable concreted area is not available, use soaked foam rubber wide enough for vehicles to drive over without snagging.
- Use CREDENCE at a dosage of **1 tablet per 5 litres**, and replenish regularly (at least twice per week).
- Transport vehicles and equipment should be thoroughly cleaned and then disinfected with a CREDENCE solution of **1 tablet per 10 litres** between each use/delivery.
- All transport crates and the interior of vehicles should be disinfected in the same manner between all loads. This should apply to all farm deliveries and personnel.

Entrance to poultry sheds:

- Daily wash and disinfect the area immediately outside the entrance to each poultry house using a CREDENCE solution strength of **1 tablet per 20 litres**.

Roof spraying:

- During hot weather periods, where water is used to cool houses by spraying or sprinkling it over the roof, it should be treated with CREDENCE at **1 tablet per 1000 litres**.

Misting/Fogging:

- Misting or fogging is sometimes used to reduce aerial cross infections between birds, or to minimise the effects of hot weather, provided it does not cause high humidity levels, which cause stress with the birds. It can be used on stored eggs before incubation. The water used should be treated with CREDENCE at a dosage of **1 tablet per 1000 litres** in general, and **1 tablet per 100 litres** for stored egg disinfection.

Infected/dead birds:

CREDENCE is registered as a stock wash, due to its low toxicity, which makes it useful for direct animal treatment.

Dead birds suspected of infection can be sprayed with CREDENCE at **1 tablet per 10 litres** to control further spread or accidental carry over during disposal.

Infected litter can be soaked in CREDENCE at the porous surface concentration of **1 tablet per 10 litres** prior to disposal to prevent spread during storage on farm (wild animals) or freight to disposal unit. This must be logged with disposal operators and on farm.

TERMINAL DISINFECTION END OF PRODUCTION CYCLE

1. Remove all birds, movable equipment and food. Hang up all fixed, adjustable equipment, such as the feed and water systems.
2. Brush, blow or vacuum all dirt and dust from vents, ducts, posts, ledges, light fittings, walkways, steps, equipment or any other areas where organic material from the outgoing batch may be found. Move from top to bottom.
3. Spray all litter and debris from the house with CREDENCE at a concentration of **1 tablet per 10 litres**, scraping where necessary, and remove to a safe point as far away as possible from the house (at least 500 m.), where it can be heaped, covered and composted. CREDENCE has been tested and declared as safe for the environment.
4. Pressure wash all items and areas (using CREDENCE as appropriate to the surface). Manually clean or include CREDENCE in a foaming agent for difficult areas. Foggers can be used inside sheds to increase ease of contact and kill rate (e.g. light fittings, ceiling material). The run-off water should be directed to a pit at the site edge, from where it can be further disinfected and taken away.
5. Full disinfection of all surfaces and equipment should commence as soon as possible after initial clean down. A CREDENCE solution is power sprayed to thoroughly wet all roofline, wall and floor surfaces, including vents, ducts etc. Areas where electrical fittings are exposed should be treated by fogging. Surfaces (at appropriate concentrations) should be uniformly sprayed at 100 litres of CREDENCE solution per 500 sq.m., and then left to dry off. Move from top to bottom, and back to front. Use a dosage of **1 tablets per 10 litres for porous surfaces (e.g. concrete) and 1 tablet per 15 litres for non-porous surfaces (e.g. tiles)**.
6. After basic cleaning, all equipment removed from the house is then disinfected using a CREDENCE solution of **1 tablet per 10 litres**.
7. The entire water system should be drained and then flushed out to remove any debris. CREDENCE should be added to the header tank at a dosage of **1 tablet per 200 litres**, and the entire system filled with the solution, and allowed to stand for 30 mins. Where biofilms are suspected, use a higher 'shock' concentration of **1 tablet per 100 litres**. The system is then drained and refilled with fresh/sanitised water (**1 tablet per 1000 litres**).
8. Bedding may be introduced 24 hours after spraying is completed.
9. For breeder and turkey fattening farms, a second disinfectant spray/fog is recommended after 7 days, before equipment is returned or bedding introduced.

CREDENCE FOR LAYING/BREEDING HEN FARMS, HATCHERIES AND INCUBATORS

1. Eggs should be collected at least 4 times daily – more in hot weather. Cleaning and disinfection should be carried out immediately.
2. Floor eggs and nest eggs should never be mixed. Floor eggs should not be incubated. Eggs are porous and can be subject to environmental infections.
3. Temperature of the cleaning and disinfectant solutions is important. Solutions should be warmer than the eggs, so that internal membrane expands to seal the shell thereby preventing pathogens and solutions from entering the egg.
4. Only clean, whole eggs can be disinfected. These eggs should be disinfected by spraying with a CREDENCE solution of **1 tablet per 100 litres** at a temperature of 52°C, or by dipping for about 3 mins. at 42°C. It is important to maintain the CREDENCE solution at a minimum strength of 50 ppm.
5. Allow the eggs to dry thoroughly before packing.
6. New eggs introduced to setters or storage areas should be fogged with a CREDENCE solution of **1 tablet per 100 litres**, sufficiently to wet the surface of the eggs
7. The water used to humidify the incubators should be disinfected using CREDENCE at a dosage of **1 tablet per 1000 litres**, to prevent cross infection, algal growth or biofilm build up.
8. The floors, walls, tables, shelves etc. of the storage rooms should be cleaned then disinfected each day or shift, using a CREDENCE solution of **1 tablet per 10 litres**. This can be applied using a foaming agent, fogger or direct spray. Contact time required 15 min.

AFTER A DISEASE OUTBREAK

1. Dead birds should be thoroughly sprayed with high strength CREDENCE **1 tablet per 5 litres** solution before removal.
2. The procedures for isolation, cleaning and disinfection should be completed as given in the previous section '**TERMINAL DISINFECTION**'.
3. The CREDENCE solution strength for disinfection of walls, floors, equipment etc. should be **1 tablet per 10 litres** to maximise efficacy. Foaming should be used to deliver CREDENCE effectively in difficult to dismantle or awkward areas in equipment and housing. The product should be left on for 24 hrs. It is not necessary to rinse CREDENCE, due to its low toxicity, but where rinsing is needed, the water must be treated with CREDENCE at **1 tablet per 1000 litres** to prevent reinfection.
4. Litter should be soaked in CREDENCE at **1 tablet per 10 litres** for 24 hrs before removal.
5. Housing should be disinfected after 7 days for a further 24 hrs. Housing and equipment should be swabbed after this, and if clear, can be repopulated. Any remaining positive swabs (e.g. certain vehicles) should be recorded as major vectors of disease transmission, and extra biosecurity or complete exclusion put into place.

IMPORTANT CONCENTRATIONS!

Treatment	1 tablet in	Final ppm
Drinking water	1000 litres	5
Farm water	1000 litres	5
Water pipes	200 litres	25
Hand/stock wash	100 litres	50
Non-porous surfaces	15	350
Equipment & vehicles	10	500
Porous surfaces	10	500
Foot baths, wheel dips	5	1000



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