



Miconovo NOVOCLEAR

Product Brochure

*An organic additive for health in agriculture – Comprehensive
Protection & Enhanced Vitality*

Version 1.0

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Challenges in Conventional Livestock Farming

Maintaining clean, healthy environments in modern livestock systems is a constant challenge. High stocking densities, rapid waste accumulation, and limited airflow often lead to deteriorating air quality and hygiene, creating conditions that affect both animal welfare and farm productivity. Without effective management, ammonia build-up, odour, and pathogen pressure can escalate quickly, placing strain on animals, staff, and margins alike.

Without a proactive, biological solution, livestock operations face a range of ongoing challenges:

- **Ammonia build-up:** Even moderate levels (as low as 3 ppm) can impair respiratory health, reduce feed intake, and suppress growth rates in animals.
- **Increased mortality and culling:** High ammonia concentrations compromise immune function and increase the risk of disease and early death.
- **Poor weight gain and feed conversion:** Animals exposed to poor air quality grow more slowly and inefficiently – reducing profits.
- **Odour and fly infestations:** Waste build-up and volatile emissions attract flies and create a difficult working environment.
- **Biosecurity risks:** Wet, nitrogen-rich bedding promotes the spread of pathogens, bacteria, and fungi.
- **Labour-intensive sanitation cycles:** Regular deep cleaning is time-consuming, costly, and often only temporarily effective.
- **Increased bedding and litter costs:** Saturated or chemically damaged flooring demands more frequent replacement.
- **Environmental compliance pressure:** Ammonia emissions and nutrient runoff contribute to pollution and regulatory scrutiny.



What is NOVOCLEAR?

NOVOCLEAR is a biologically active formulation, verified organic and composed of carefully selected strains of naturally occurring, non-pathogenic microorganisms. These microbes have been specifically selected to biodegrade nitrogenous waste, including urea, uric acid, and ammonia along with other organic compounds commonly found in animal manure.

Through a process of **microbial enzymatic activity**, NOVOCLEAR rapidly converts ammonia and ammonium compounds into stable, non-volatile forms. This not only **prevents the release of gaseous ammonia** into the air but also disrupts the conditions that allow harmful, odour-producing bacteria to thrive.

By **outcompeting native ammonia-producing microbes**, NOVOCLEAR shifts the microbial balance in favour of beneficial organisms. This leads to cleaner, healthier waste environments with significantly reduced odour and pathogen load.

NOVOCLEAR is applied directly to bedding, flooring, manure pits, or waste accumulation zones using simple spray equipment. It acts in situ, without the need for mechanical agitation or chemical neutralisers, making it a safe, non-toxic, and environmentally sustainable alternative for both agricultural and public sanitation use.



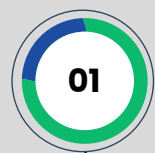
What benefits will NOVOCLEAR provide?

NOVOCLEAR offers a **measurable advantage** across livestock operations by enhancing air quality, improving environmental hygiene, and supporting overall animal welfare. Its application results in **immediate improvements** to in-house conditions, creating a safer and more **productive environment** for both animals and staff.

Livestock benefit from **improved air quality, reduced stress**, and a **cleaner living environment**, all of which contribute to better growth rates and lower mortality. For farm personnel, reduced odours and lower exposure to airborne irritants create a more pleasant and health-conscious workplace.

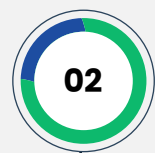
Operationally, NOVOCLEAR extends the life of bedding, reduces the frequency of deep cleans, and enhances the quality of manure, thereby turning waste into a valuable input. Furthermore, also supports regulatory compliance by lowering ammonia emissions and reducing environmental impact.

By promoting healthier, more consistent conditions, NOVOCLEAR helps producers achieve **greater efficiency, sustainability, and profitability** across production cycles.



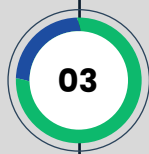
Faster breakdown of waste materials

Accelerates the decomposition of urea and uric acid, helping to reduce the physical volume and persistence of animal waste in enclosures — simplifying management and reducing build-up between cleanouts.



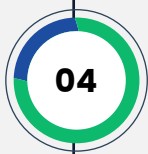
Reduced need for chemical treatments

Replaces or reduces reliance on harsh chemical neutralisers, insecticides, and odour-masking agents, enabling a more natural, biologically balanced approach to farm sanitation.



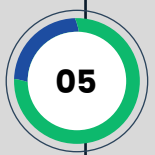
Extended bedding lifespan

Treated environments stay drier and more stable for longer, allowing bedding materials such as straw, sawdust, or shavings to last through more cycles before needing to be replaced — saving on input costs.



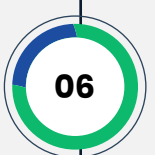
Enhanced working conditions for staff

Noticeable reduction in unpleasant smells within hours of application, as well as a reduction in flies, creating a fresher, cleaner environment for both animals and staff.



Improved nutrient profile of manure

By stabilising ammonia and enhancing phosphorus availability, NOVOCLEAR improves the fertiliser value of waste — offering farmers better-quality material for land application or resale.

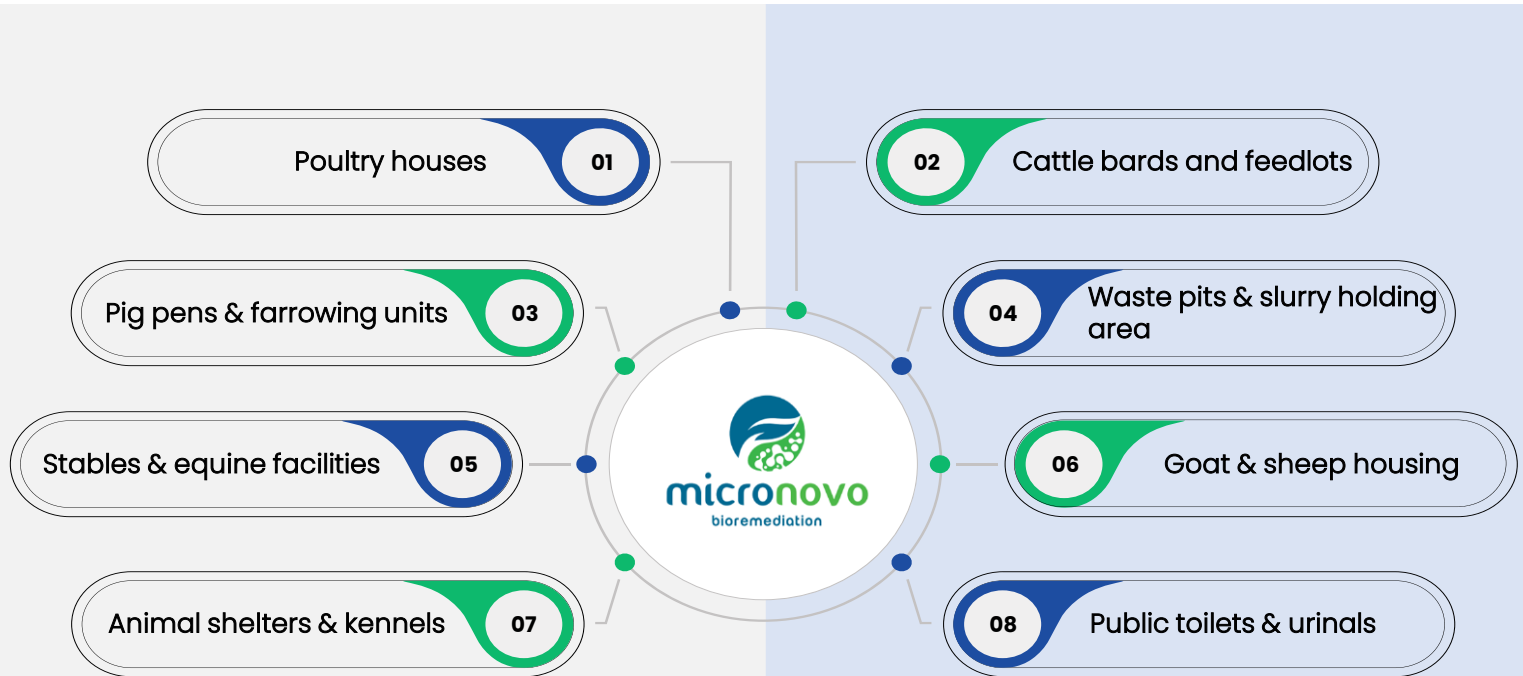


Consistency across production cycles

With regular use, NOVOCLEAR helps to stabilise in-house conditions, leading to fewer fluctuations in animal performance and creating a more predictable, optimised production environment.

Product Applications

NOVOCLEAR is a highly adaptable solution designed for use across a wide range of agricultural and sanitation settings. Wherever organic waste accumulates, and ammonia is a concern, Novoclear offers an effective, easy-to-apply intervention that improves air quality, hygiene, and operational efficiency.



Poultry houses: Reduces ammonia levels in broiler and layer facilities, improving bird welfare and performance.

Pig pens and farrowing units: Controls odour and airborne toxins in high-density swine environments.

Stables and equine facilities: Maintains cleaner bedding, reduces respiratory risks, and supports hoof and skin health. Significantly reduces flies.

Animal shelters and kennels: Improves hygiene and comfort in high-turnover or confined animal care facilities.

Cattle barns and feedlots: Enhances air quality and reduces waste-related hygiene issues in enclosed or high-traffic zones.

Waste pits and slurry holding areas: Accelerates organic breakdown and reduces gaseous emissions prior to removal or land application.

Goat and sheep housing: Supports flock health by minimising airborne irritants and stabilising bedding conditions.

Public toilets and urinals: Controls odour and ammonia build-up in high-traffic sanitation environments, especially where ventilation is limited.

Product Data

Product Composition

CAS #	CAS # COMPONENT
Not Available	Enzyme and Microbial Blend
7727-37-9	Nitrogen
7440-09-7	Potassium
7440-44-0	Organic Carbon
Not Available	Organic matter
7732-18-5	Water

Physical & Chemical Properties

- **Appearance:** Brown
- **Odour:** Molasses like
- **Physical state:** Liquid
- **pH Range:** Optimum pH range is 6.2
- **Boiling point:** 100C
- **Solubility (H2O):** Soluble
- **Vapour pressure:** None
- **Vapour density:** None
- **Specific gravity:** Approx. 1.0g/cc3
- **Evaporation rate:** ND
- **VOC:** NA
- **Octanol/H2O Coeff.:** ND
- **Flash point:** None

Safety

Handling & Storage Instructions:

Handling Procedures: Avoid eye contact

Storage Procedure: Store in cool dry area. Protect containers from damage.

Personal Protective Equipment (PPE):

- Personal Protective Equipment: Eyes/Face – Wear goggles.
- Personal Protective Equipment: Skin – Use impervious gloves.
- Personal Protective Equipment: Respiratory – If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

First Aid Measures:

- **Eyes:** Check for and remove any contact lenses. Immediately flush with plenty of water for at least 15 minutes. Get medical attention if irritation persists.
- **Skin:** In case of contact, wash off with water.
- **Ingestion:** The product will produce an emetic effect.
- **Inhalation:** Not expected to require first aid measures. Remove to fresh air. Get medical attention for any breathing difficulties.

Full Material Safety Data Sheet (MSDS): MSDS is available separately

Use Case

Intense Layer Chicken Facility

Layer Facility

The Challenge

In a manually cleaned layer facility with limited ventilation and high organic waste accumulation, ammonia build-up and fly infestations were persistent challenges. Waste could only be removed once per week, creating prolonged exposure to harmful emissions and odours. This not only compromised air quality and bird welfare but also made working conditions difficult and sanitation inconsistent. A solution was needed that could act quickly, with minimal labour, and deliver lasting improvement between waste removal cycles.

A Proven Solution with NOVOCLEAR

NOVOCLEAR was applied as a single treatment to the entire 600 m² house using a 3% concentration (6 g per m² diluted in 200 ml water), in line with manufacturer recommendations. Application was performed with standard backpack sprayers, directly targeting the waste channels beneath the bird cages where ammonia concentration was highest. The aim was to biologically suppress ammonia generation and reduce odour at the microbial level, even in the absence of mechanical waste removal or enhanced airflow.

Real-World Validation

NOVOCLEAR demonstrates strong and lasting ammonia suppression from just one application, despite challenging conditions with no mechanical ventilation or frequent cleaning. It **eliminated ammonia odour within hours**, sustained safe levels for a full week, and improved the quality of manure as a fertiliser.

How NOVOCLEAR worked in this setting

NOVOCLEAR was applied as a **single treatment** across the 600 m² layer facility, using a 3% solution (6g per m² diluted in 200 ml of water). The application targeted the **waste collection channels beneath the cages**, where ammonia emissions were highest due to the accumulation of manure between weekly cleanouts.

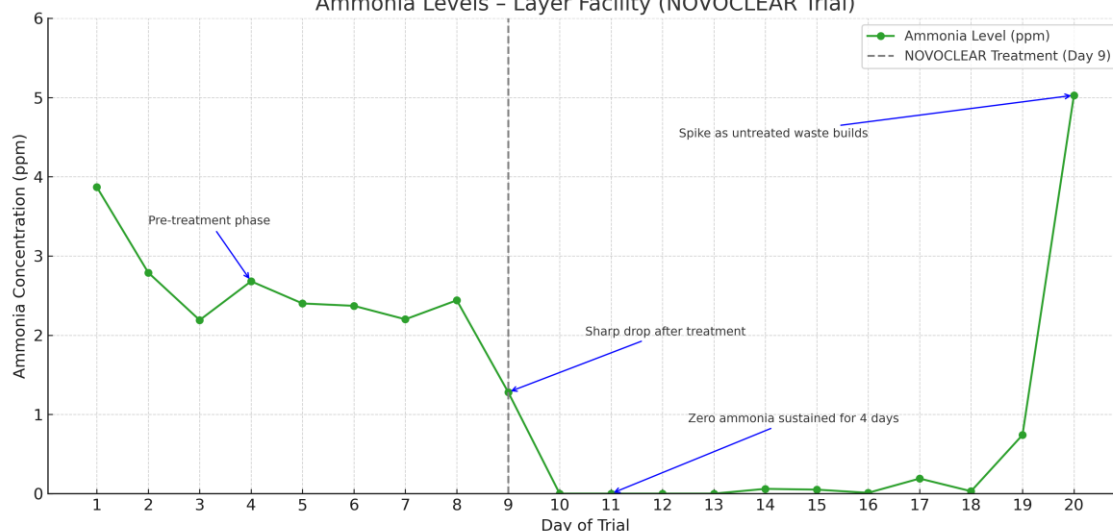
The product was applied using **standard backpack sprayers**, requiring no disruption to animal housing or changes to daily operations. The treatment was completed in a single pass and left to act biologically – with no need for mechanical agitation or follow-up application during the trial period.

By targeting the microbial breakdown of nitrogenous waste, NOVOCLEAR worked to suppress ammonia generation at its source, rather than simply masking odours or attempting to chemically neutralise emissions

Conclusion

In manually managed layer facilities, NOVOCLEAR proved **highly effective** in restoring air quality and **controlling ammonia** between cleanouts. It delivered fast results, improved working conditions, and enhanced the nutrient value of accumulated waste, all with a single, **low-effort application**. NOVOCLEAR offers a simple yet powerful way **to improve welfare, sanitation, and efficiency**. These outcomes validate NOVOCLEAR as a practical, biological tool for egg producers seeking improved hygiene and air quality without disrupting daily operations.

Ammonia Levels - Layer Facility (NOVOCLEAR Trial)



Results

This graph shows a clear and immediate drop in ammonia levels by 48% following a single NOVOCLEAR treatment on Day 9, from 2.44 ppm to 1.28 ppm in just 24 hours.

Remarkably, ammonia remained at or near **0 ppm for 5 consecutive days**, despite no change in cleaning routine or ventilation.

The sharp spike near Day 20 highlights the return of ammonia once untreated waste began to accumulate again – reinforcing the value of consistent NOVOCLEAR use.

Use Case

Intense Broiler Chicken Facility

Broiler Facility

The Challenge

At the broiler facility, atmospheric ammonia had become a persistent and costly problem. With 45,000 broiler chicks housed in each cycle, the accumulation of excreta produced high concentrations of ammonia gas – known to irritate the respiratory tract, reduce feed intake, and increase disease risk. These conditions were contributing to:

- High mortality rates
- A large number of culled birds
- Poor feed-to-weight conversion
- Suboptimal final bird weight at slaughter

Traditional mitigation methods, such as ventilation and bedding management, were not sufficiently controlling ammonia levels, particularly in corners and barrier zones within the house.

A Proven Solution with NOVOCLEAR

NOVOCLEAR was introduced as a biological intervention to address the root cause of ammonia build-up. Instead of masking odours, it works by breaking down nitrogen-rich waste compounds before they can convert into gaseous ammonia.

The product was applied directly to the litter surface using standard 16L backpack sprayers. The dosing schedule was as follows:

- **Day 7:** Initial treatment using a 1% NOVOCLEAR solution (150ml/m²)
- **Day 14:** Second treatment using a 3% solution (150ml/m²)
- **Day 21:** Third treatment at 3% concentration

How NOVOCLEAR worked in this setting

Ammonia levels were measured before and after each application, with results showing a consistent and significant reduction:

- **Day 7:** 3.2 ppm reduced to 1.7 ppm (↓ 47%)
- **Day 14:** 1.96 ppm reduced to 0.84 ppm (↓ 57%)
- **Day 21:** 1.5 ppm reduced to 0.9 ppm (↓ 40%)

Crucially, ammonia concentrations remained below 2 ppm – the level considered safe for broilers – for the remainder of the cycle. This reduction in gaseous toxicity had a measurable effect on bird performance.

Real-World Validation

The trial delivered more than just cleaner air; it produced clear performance improvements across key production metrics. Mortality dropped by over 58%, culls were reduced by 72.5%, and final bird weights increased by nearly 16%. Feed conversion and EPEF both improved, highlighting better feed efficiency and flock health. These results demonstrate that NOVOCLEAR doesn't just control ammonia. It transformed in-house conditions into measurable production gains..

Conclusion

In a facility with historically high ammonia and poor bird performance, NOVOCLEAR delivered fast, measurable results. It consistently reduced ammonia to safe levels, improved air quality, and drove significant gains in survival rate, final weight, and overall production efficiency. With minimal labour and a simple application process, NOVOCLEAR proved to be a high-impact, low-disruption solution for broiler operations looking to improve profitability and animal welfare.

Metric	Untreated	Treated	% Change
Viable birds at slaughter	37,871	42,256	+11.6%
Total mortality	5,560	2,313	-58.4%
Birds culled	1,569	431	-72.5%
Final bird weight (g/bird)	1,851	2,146	+15.9%
Weight gain per bird	1,671	1,984	+18.7%
Feed Conversion Ratio (FCR)	1.559	1.539	-1.28%
EPEF	332.7	358.3	+7.6%

Table illustrating comparison between treated and untreated broiler house

Note: Variation in conditions will result in variable results, each setting should be evaluated to determine suitability, dosing requirements and expected outcomes

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