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Match Maker

Dairy and Poultry Health Solutions

MplasGuard: A Residue-Free Solution to Break the Mycoplasma Infection Cycle in Poultry

Lead Inventor: Dr. Asmita Prabhune
Organization: Green Pyramid Biotech Pvt Ltd
TechEx.in Case Manager: Pradnya@venturecenter.co.in | 8805009010

Problem: Mycoplasmosis in Poultry

- Mycoplasma gallisepticum (MG) & Mycoplasma synoviae (MS) → major causes of chronic respiratory disease (CRD) in poultry
- Highly contagious; spreads via air, equipment, vertical transmission (egg)

Why is it critical?

Chronic infection → persists for entire production cycle

Causes:

- Reduces weight gain (broilers)
- Reducese egg production & hatchability (layers/breeders)
- Affects feed Conversion Ratio (FCR)

Disease characteristics (key challenge)

- Wall-less bacteria → inherently resistant to many antibiotics
- Forms biofilms → recurrence & persistence
- Frequently co-infects with E. coli → severe respiratory complex

Mycoplasma is a persistent, hard-to-treat respiratory infection that silently reduces productivity across the entire poultry lifecycle

Scale and Importance of the problem

Massive global exposure

- Poultry = fastest-growing protein sector globally
- >70 billion chickens/year produced worldwide
- High-density farming → ideal for rapid disease spread

High disease prevalence

- Mycoplasma present in 30–80% of commercial flocks (region-dependent)

Significant economic losses

- ~$780 million/year loss from Mycoplasma gallisepticum alone
- Egg production loss (10–20%)

Existing Methods/ Solutions

Preventive

- Vaccines
- Disinfectants
- Biosecurity measures

Therapeutic

- Antibiotics

Market size and opportunity for antibiotics

- Poultry antibiotic market: ~$2.25–3.38B (source: SNS Insider)
- Respiratory diseases (MG, E. coli, ORT, etc.) account for: ~30–40% of antibiotic usage in poultry (Source: derived industry estimate based on: Disease prevalence and Antibiotic usage patterns in poultry)
- Mycoplasma is one of the dominant chronic respiratory pathogens contributing to 30-50% of the respiratory antibiotics usage (Source: derived industry estimate)
- Estimated Mycoplasma-specific antibiotic market: ~$250 million – $650 million annually (global

Limitations of current methods and unmet need

Parameter	Vaccines	Antibiotics	Chemical Disinfectants
Relief (symptom control)	Reduces severity	Rapid symptomatic relief	No direct relief in infected birds
Chances of reinfection	High (infection persists)	High (carrier state remains)	High (no effect inside host)
Effect against biofilms	No effect	ineffective	ineffective
Residual concerns → downgrading / rejection	No residues	High (MRL violations risk)*	Low
Antimicrobial resistance (AMR)	No AMR risk	High (major global concern)	No AMR (non-antibiotic)

- 2–18% batches risk regulatory non-compliance due to antibiotic residues

Unmet need: A curative, residue-free solution that eliminates persistence and prevents recurrence of Mycoplasma infection

About the technology

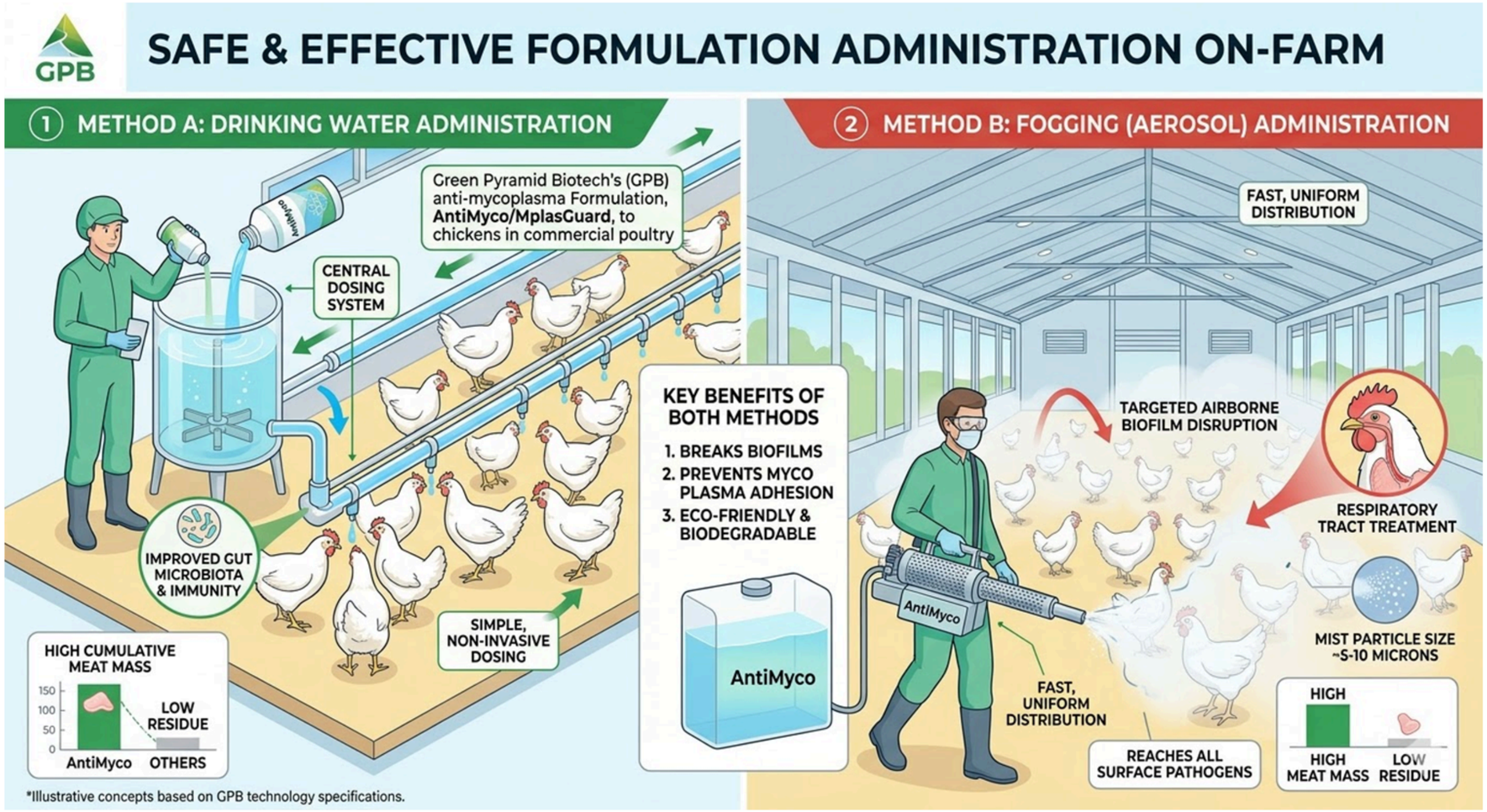
MplasGuard-NS

- Water-based formulation of plant derived actives (proven in the literature)
- Bio-fermentation derived excipients
- Proprietary technology: to enhance bioavailability of the actives & synergistic action (currently trade secret)
- Made from GRAS ingredients → safe, residue-free
- No withdrawal period

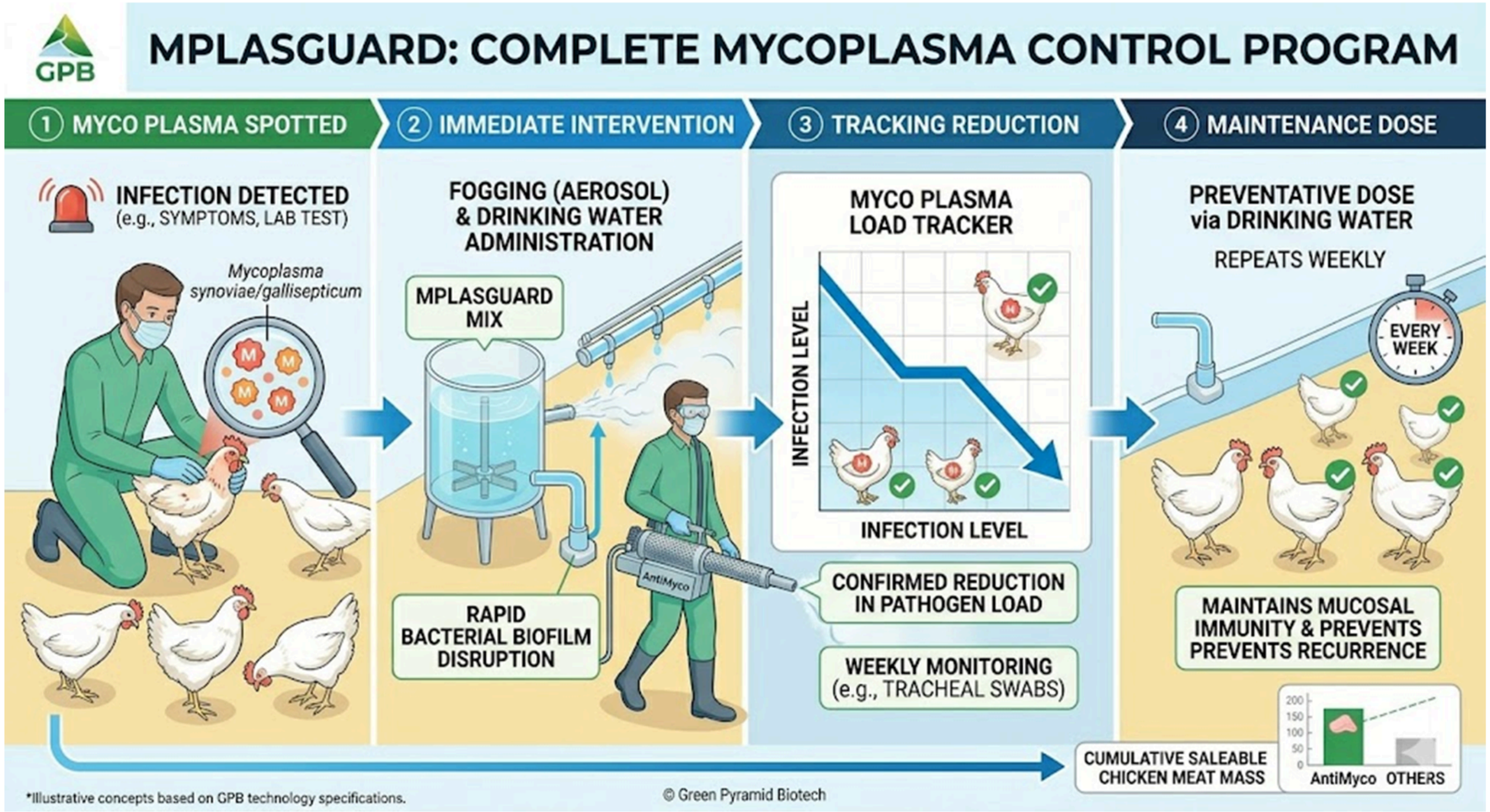
Expected mode of action on Mycoplasma:

- Disruption of Mycoplasma cell membrane
- Deep penetration
- Prevention of Mycoplasma adhesion to the respiratory epithelium
- Breakage and inhibition of biofilm formation

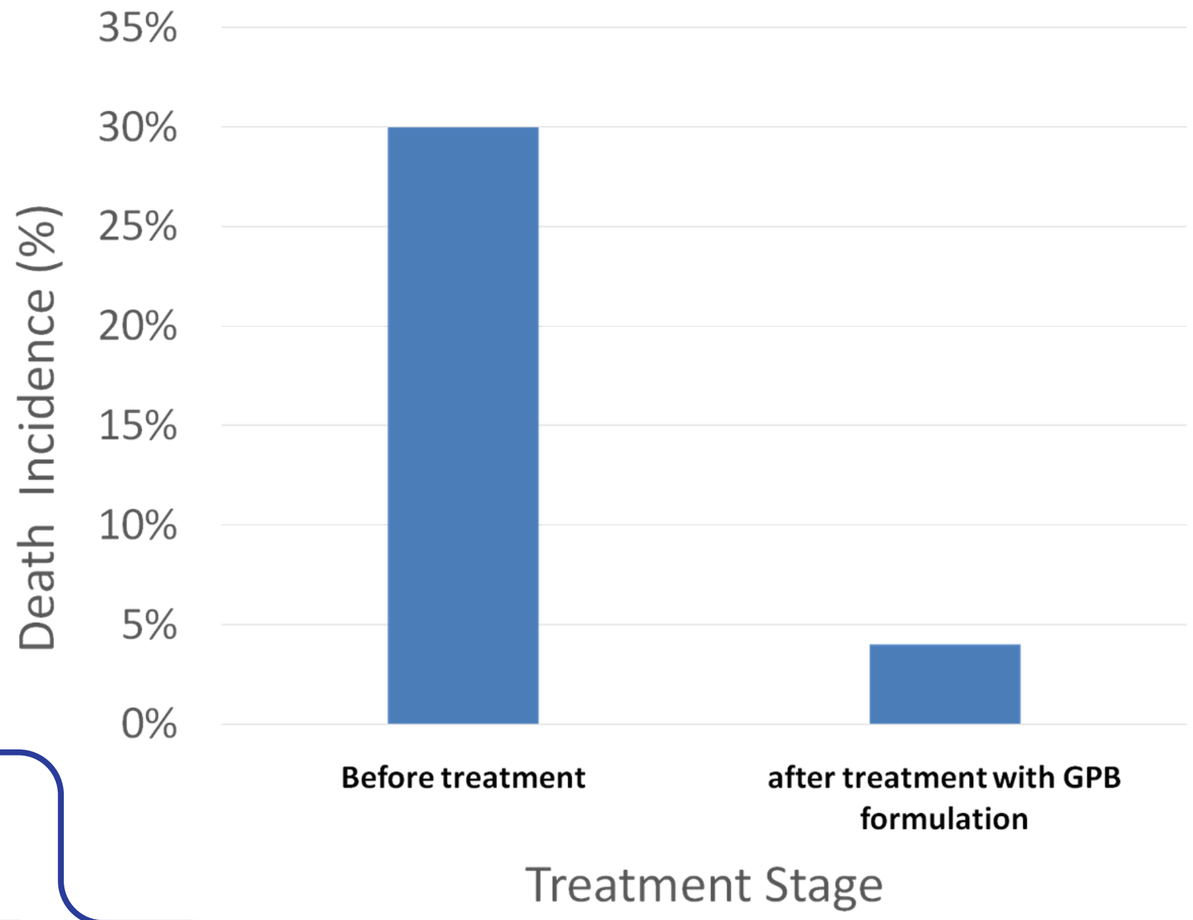
How it will work?



Treatment Protocol



Field trials



Field validation was conducted under real farm conditions

Flock size: 5,000 birds
Stage: Breeding stage
Status: already infected

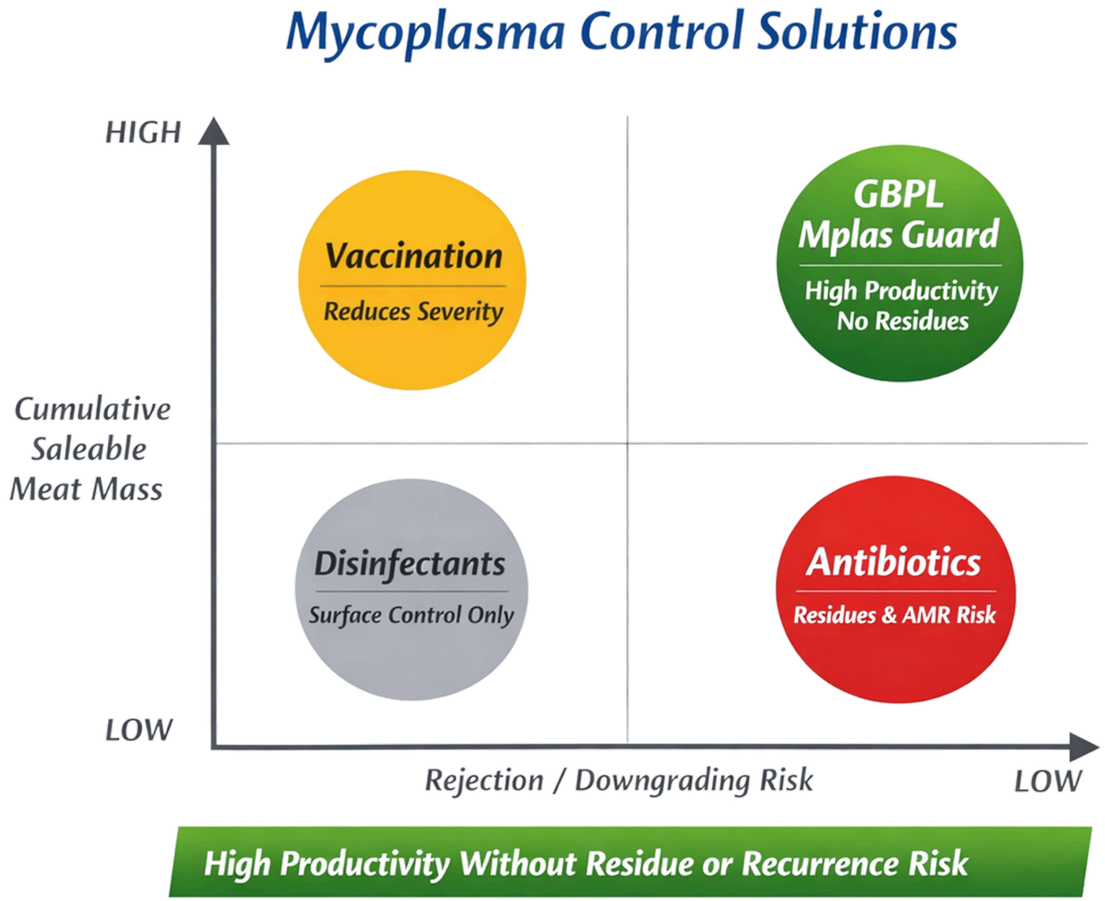
Results

- Mortality reduced from 30% to 4%
- Rapid improvement in respiratory symptoms
- Improved feed intake and uniformity

Value Proposition and Comparison

Parameter	Vaccines	Antibiotics	Chemical Disinfectants	GBPL Mplas Guard
Relief *(symptom control)*	Reduces severity	Rapid relief	No direct relief in infected birds	**Rapid + sustained relief**
Chances of reinfection	High	High	High	**Low** (breaks recurrence cycle)
Effect against biofilms	No effect	No effect	Poor penetration → ineffective	**Effective** (biofilm disruption)
Residual concerns → downgrading / *rejection*	None	High (MRL violations risk)	Possible (if misused / contamination	**None** (residue-free)
Antimicrobial resistance (AMR)	None	High	Possible	**No AMR risk**

Differentiation Matrix

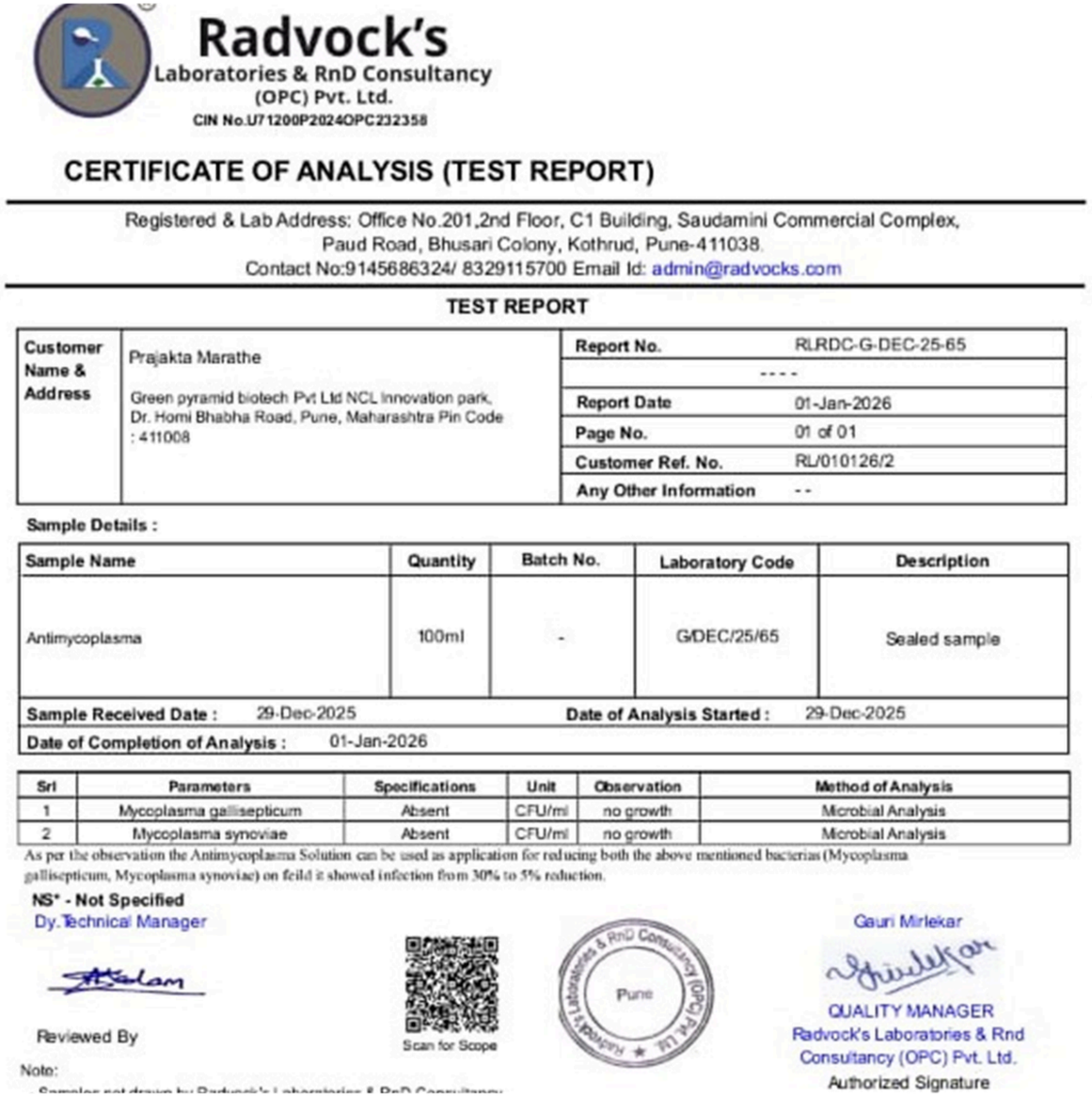


Current status

Technology status:

- Status of the technology - TRL
- What scale it has been demonstrated at ?
- TRL 5 (Prototype tested in relevant environment)
- IP STATUS : Trade secret formulation

Certification from NABL accredited lab showing antimycoplasma activity of MplasGuard



Radvock's
Laboratories & RnD Consultancy (OPC) Pvt. Ltd.
CIN No.U71200P2024OPC232358

CERTIFICATE OF ANALYSIS (TEST REPORT)

Registered & Lab Address: Office No.201,2nd Floor, C1 Building, Saudamini Commercial Complex, Paud Road, Bhusari Colony, Kothrud, Pune-411038.
Contact No:9145686324/ 8329115700 Email Id: admin@radvocks.com

TEST REPORT

Customer Name & Address	Prajakta Marathe Green pyramid biotech Pvt Ltd NCL Innovation park, Dr. Homi Bhabha Road, Pune, Maharashtra Pin Code : 411008	Report No.	RLRDC-G-DEC-25-65

		Report Date	01-Jan-2026
		Page No.	01 of 01
		Customer Ref. No.	RL/010126/2
		Any Other Information	--

Sample Details :

Sample Name	Quantity	Batch No.	Laboratory Code	Description
Antimycoplasma	100ml	-	G/DEC/25/65	Sealed sample

Sample Received Date : 29-Dec-2025 Date of Analysis Started : 29-Dec-2025
Date of Completion of Analysis : 01-Jan-2026

Srl	Parameters	Specifications	Unit	Observation	Method of Analysis
1	Mycoplasma gallisepticum	Absent	CFU/ml	no growth	Microbial Analysis
2	Mycoplasma synoviae	Absent	CFU/ml	no growth	Microbial Analysis

As per the observation the Antimycoplasma Solution can be used as application for reducing both the above mentioned bacterias (Mycoplasma gallisepticum, Mycoplasma synoviae) on feild it showed infection from 30% to 5% reduction.

NS* - Not Specified
Dy.Technical Manager

Reviewed By

Scan for Scope

Note:

Pune

Gauri Mirlekar
QUALITY MANAGER
Radvock's Laboratories & Rnd Consultancy (OPC) Pvt. Ltd.
Authorized Signature

Next Steps

Product Validation & Scale-up:

- Expand multi-location field trials across broilers, layers, breeders
- Generate quantified performance data:

– Incidence of infection
– Incidence of death
– Minimum residue levels
– FCR
– Optimize dosage & administration protocols (water + fogging).

Seeking

Go-to-Market Partnerships

•Marketing & distribution partners for GPBL formulations
•Access to established poultry networks

Technology Commercialization

•Technology licensing and advancing the technology to market

Who we are looking for?

1.Poultry feed & nutraceutical companies
2.Poultry pharmaceuticals manufacturer

Next Steps

Lead Inventor / Researcher

Dr.Asmita Prabhune

Director and Co-founder
Green Pyramid Biotech Pvt. Ltd
Alumnus CSIR-NCL

- Fellow, Maharashtra Academy of Science (2012).
- 28 Patents (18 granted, 10 filed)
- 148+ international publications.
- Mentored 24 PhD scholars & 4 postdoctoral fellows.
- Recipient of international research fellowships in the UK and Germany (DST-DAAD).
- Recognized by BIRAC-DBT and Swissnex for innovation in sustainable biotechnology

Key assets and strengths of the team:

Madhavi Kanade
MSc. Microbiology,
Research microbiologist

Priyanka Sakundarwar
Director and Cofounder,
Green Pyramid Biotech Pvt. Ltd

Aishwarya Pawar
MSc. Microbiology,
Research microbiologist

Prajakta Marathe
PMSc. Microbiology
R&D Executive

Team Strength: 9

Well Equipped lab @VEnture Center, Pune

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