

# Capital Markets Day

**Welcome & Introduction  
Dr. David Hallas CEO**

**November 2023**

[www.ecoanimalhealthgroupplc.com](http://www.ecoanimalhealthgroupplc.com)

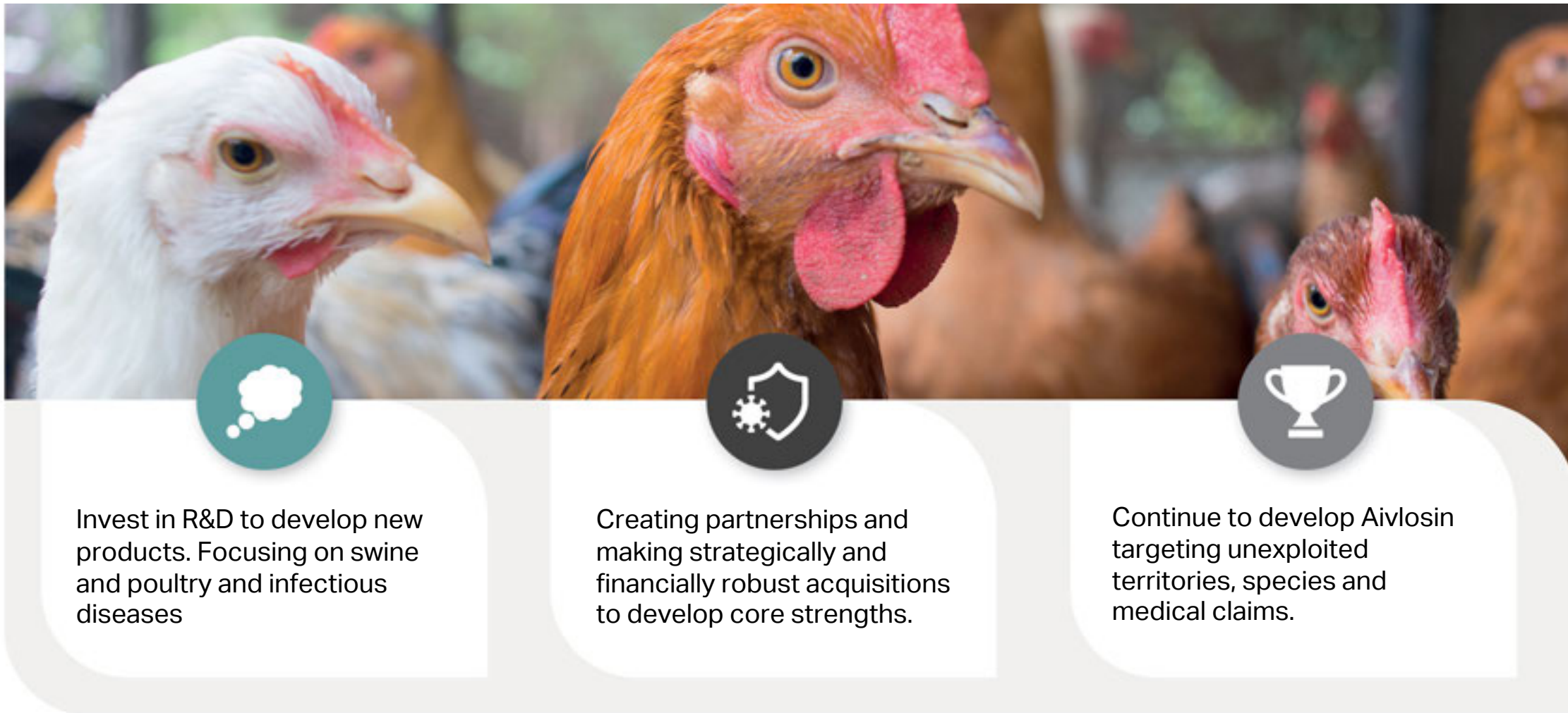
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# Harnessing global demographic trends - drives animal protein demand

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Population growth, compounding with GDP growth, increases meat consumption.

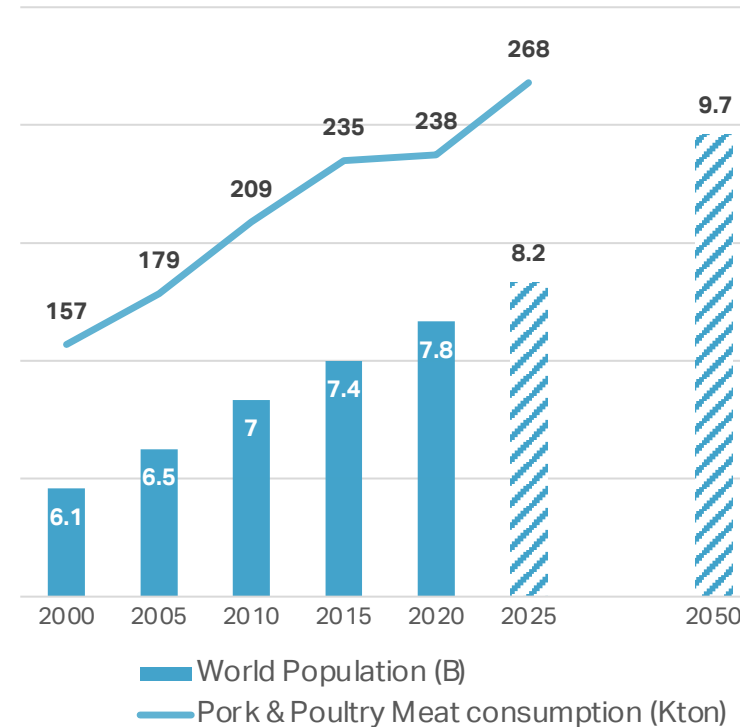


Nearly 2 billion more people to feed by 2050 globally.



Animal protein consumption increases with GDP and average household income growth.

**Pork and Poultry Consumption (KTon) vs Global Population (Billions)**





# Shaping the future of swine & poultry prevention with robust portfolio & pipeline

5



## Vaccines for key economic diseases

Ecovaxxin® MG

Ecovaxxin® MS

Ecovaxxin® PCV-2 Mh



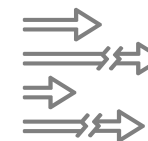
## Monoclonal Antibodies

PRRS-V Mab

NE Mab

Anti-Parasitic  
candidates

1st



## Innovative delivery technologies

Reversal thermal technology

Mass delivery via *B. subtilis*

Monoclonal technology has revolutionised human health; added billion \$ medicines to the companion animal segment. Eco will bring this innovation to livestock

## Agenda (Morning)

6

Welcome and Introduction Dr. David Hallas CEO	10.30-10.35
R&D Overview, Strategic Approach and Portfolio Dr. Hafid Benchaoui Head R&D	10.35-10.50
Importance of Mycoplasmas in poultry Professor Naola Ferguson	10.50-11.00
Best in Class Poultry Mycoplasma vaccines Dr. Natalie Desloges	11.00-11.10
Game changing Swine Biologicals Dr. Brian Martinson	11.10-11.25
Innovation in the treatment of swine respiratory disease Dr. Alphonso Lopez	11.25-11.30
Novel approaches to control enteric disease in poultry Dr. Alphonso Lopez	11.30-11.40
Biologicals Production Dr. Mike Huether	11.40-11.50
Portfolio Valuation & Financial analysis Chris Wilks CFO	11.50-12.05
Summary Dr David Hallas	12.05-12.15
Q&A	12.15-12.30

# Capital Markets Day

**Research & Development:**  
***ECO's Innovation Engine***

**09 November 2023**

[www.ecoanimalhealthgroupplc.com](http://www.ecoanimalhealthgroupplc.com)



Dr. Hafid Benchaoui, DVM, PhD  
**Head, Global R&D**

*"We focus on **biotech innovation** for **swine and poultry medicine**."*



*The next phase of our evolution is entry into the **biologicals space** through development of novel vaccines and **unique alternatives to antibiotics***

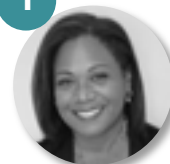


*ECO is discovering and patenting **first-in-class single domain monoclonal antibodies (nanobodies)** for animal health".*



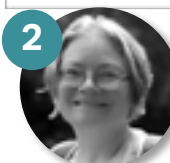
## INVITED EXTERNAL SPEAKER:

1



**Professor Naola Ferguson-Noel, DVM, MAM, PhD**  
**Professor, Department of Population Health, Poultry Diagnostic and Research Center**  
*Importance of mycoplasmas in poultry*

2



**Nathalie Desloges, PhD**  
**Global Project Leader**  
*Best-in-class poultry mycoplasma vaccines*

3



**Brian Martinson, PhD**  
**Global Project Leader**  
*Game changing porcine biologicals*

4



**Alfonso Lopez, DVM, Dip. ECPHM, PhD**  
**Senior Clinical Development Manager**  
*a) Innovation in the treatment of swine respiratory disease  
b) Novel approaches to control enteric disease in poultry*

5



**Michael Huether, MS, PhD**  
**Senior Consultant**  
*Biologicals production*



# ECO R&D at a Glance

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Innovation Throughout



2023 Budget

**£9.7M**

+ £829K on R&D Lab

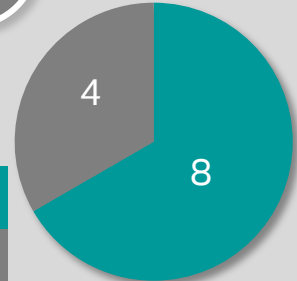
Investing for Success



IP Assets

Granted or Pending

Draft



Securing our Innovation



Active Globally



Process supporting People



Pipeline

12



Early Stage Assets

4



Clinical Stage Assets

6



Late Stage Assets

2





Externally focused **mindset**  
Global R&D **Partnerships**  
Leverage Platform  
**Technology**



Support from **ECO lab**  
Strategic Manufacturing  
**Partnerships**  
Global Project  
**Leadership**  
Global CRO **Network**



**Speed to Market:**  
**1<sup>st</sup>** US/RoW  
**2<sup>nd</sup>** EU/UK/China

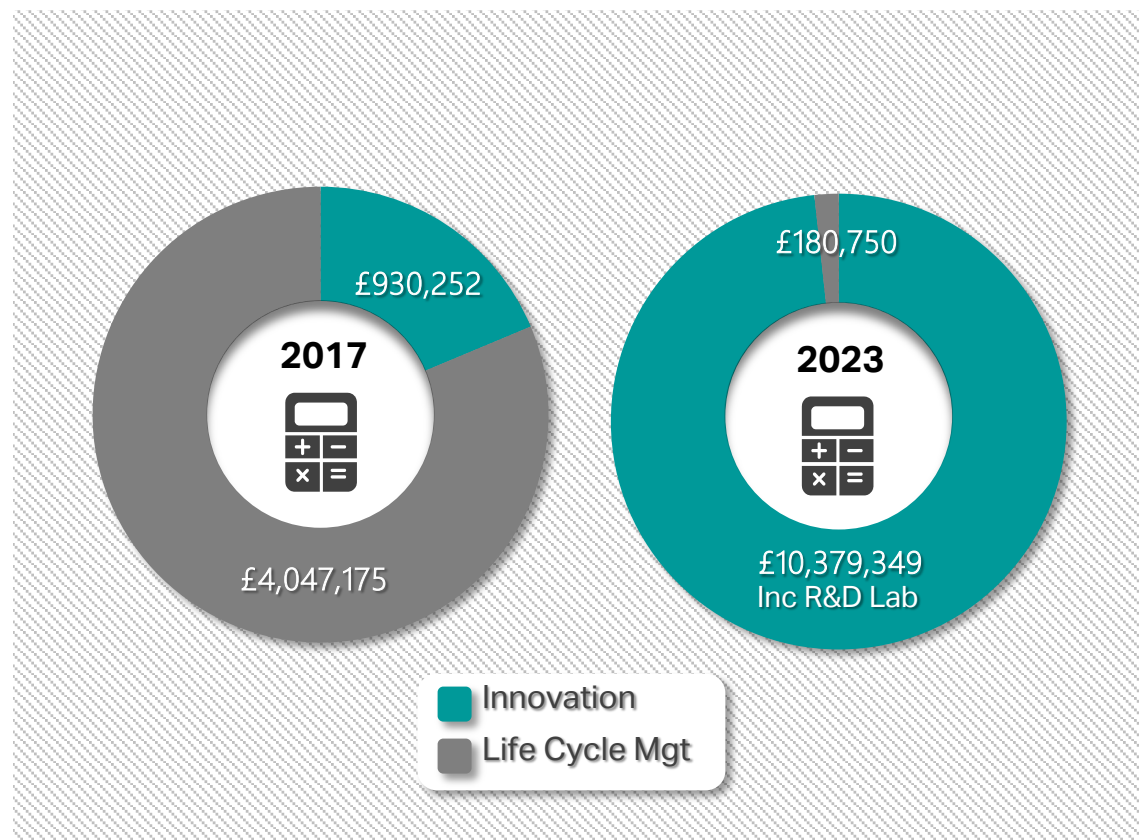
## Our new R&D Lab in Des Moines (USA)

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Fully operational since  
April 2023

Provides flexibility to  
move our mid- and late-  
stage projects forward at  
pace





**1116%** increase in ECO Innovation fund between 2017 & 2023



~10% sales spent on R&D



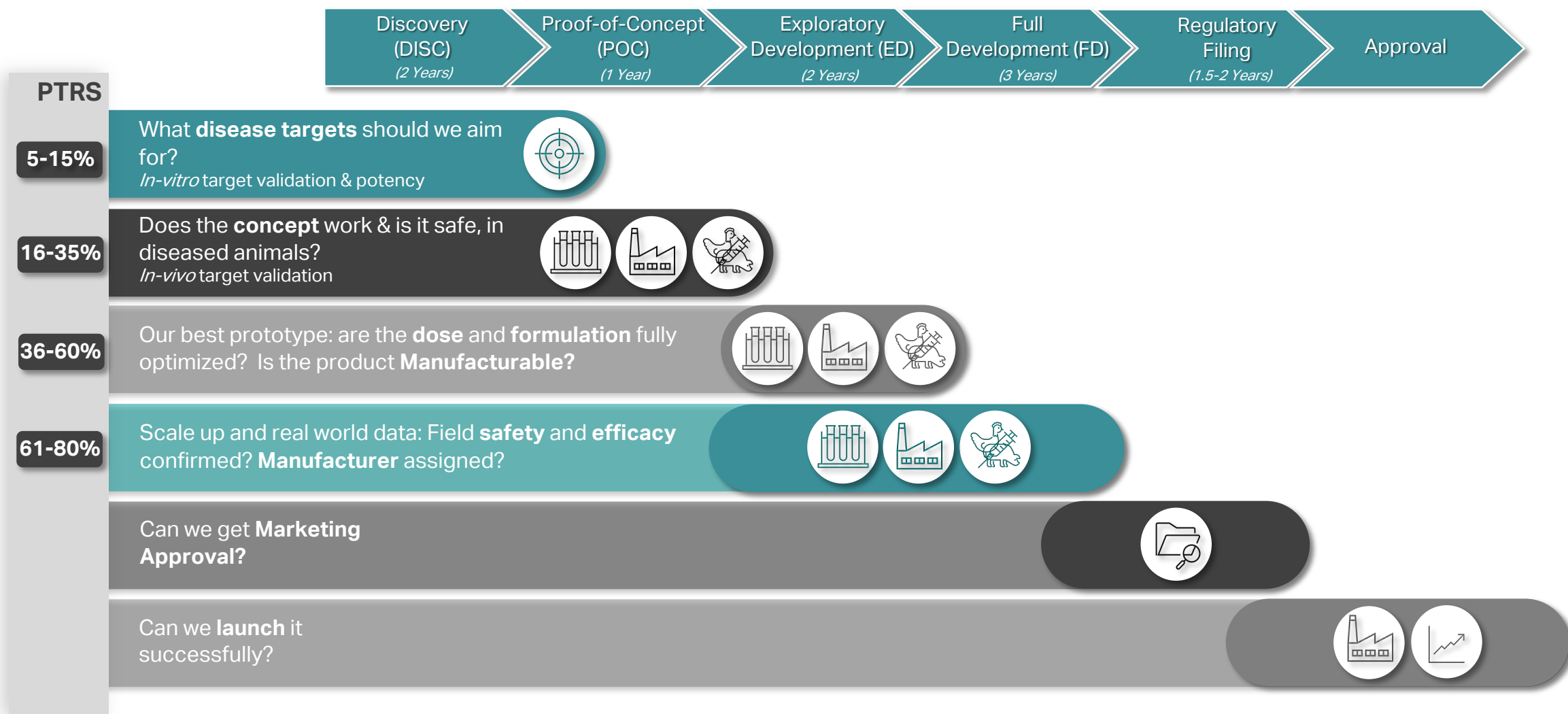
Increased R&D expenditure commensurate with maturing pipeline



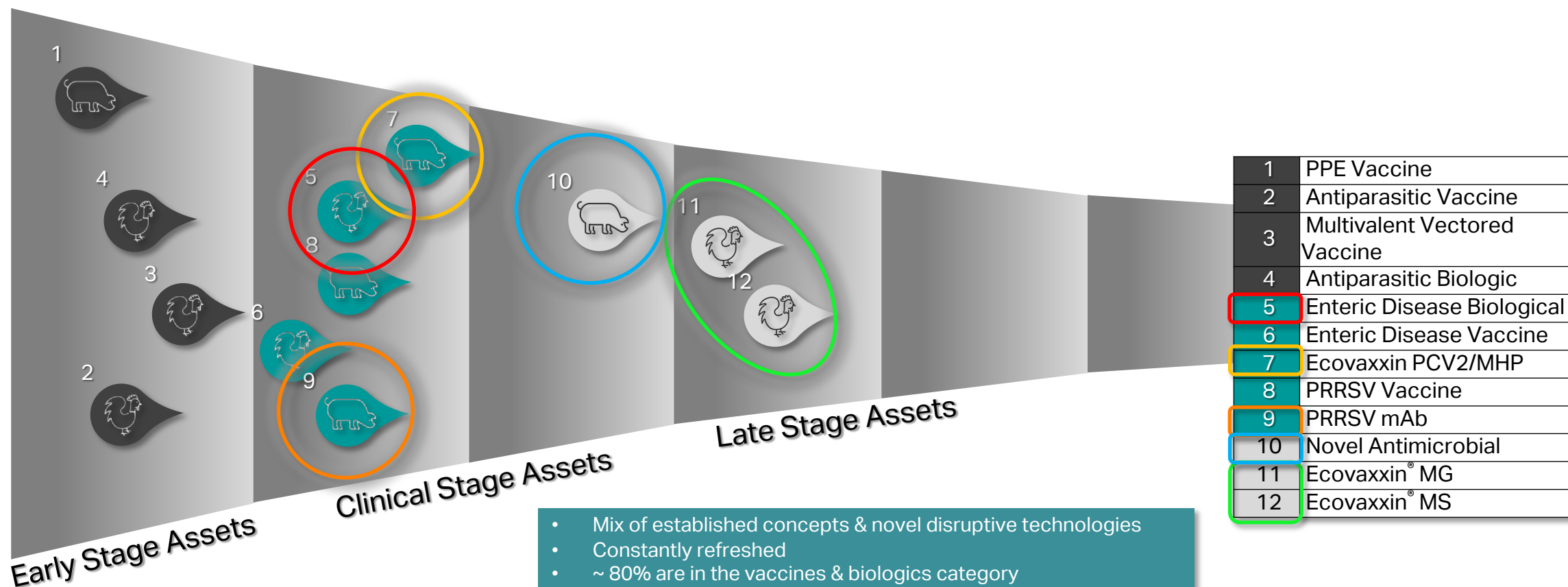


# Modelling our R&D Process Through Stage Gates

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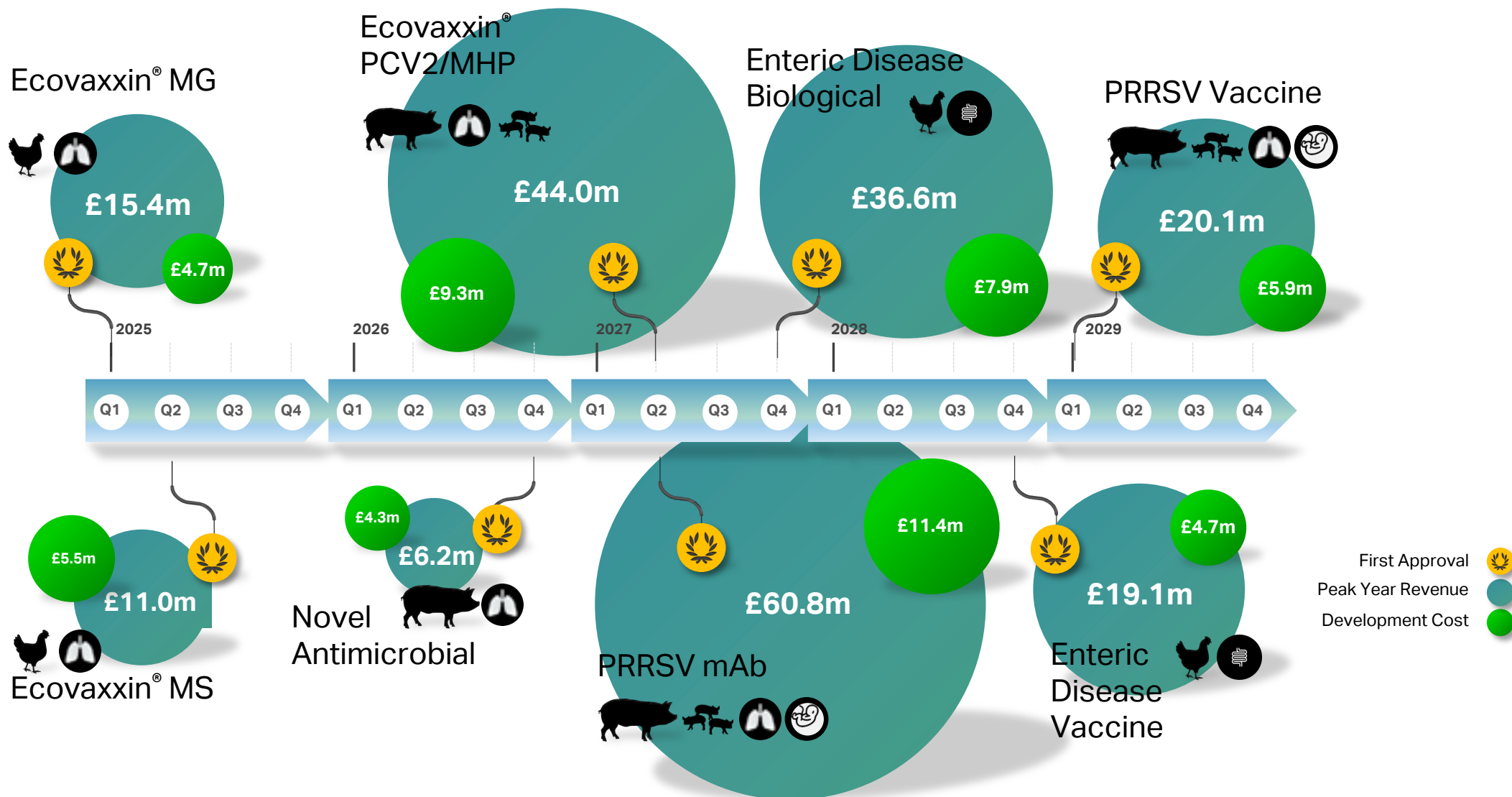
on treatment & prevention of Pig & Poultry bacterial, viral and parasitic diseases of economic importance



- Mix of established concepts & novel disruptive technologies
- Constantly refreshed
- ~ 80% are in the vaccines & biologics category
- Attrition: 6 projects (33%) since 2017

# First approvals – Clinical & Late-Stage Assets

15



# The three pillars of our strategy

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Towards establishing ECO as world-class player in biotech innovation for swine and poultry



**Competent**, covering a broad range of relevant expertise  
**Experienced**, with proven track record of product registrations  
**Committed**, delivering in the face of high regulatory hurdles



Dynamic **R&D Lab**  
Collaborative **CDMO Network**



**Proprietary Innovations**  
**Maturing R&D Assets**  
**Revenue Generative** within 2025 Horizon

Dr. Hafid Benchaoui,  
DVM, PhD

**Head, Global R&D**





# Avian Mycoplasmosis



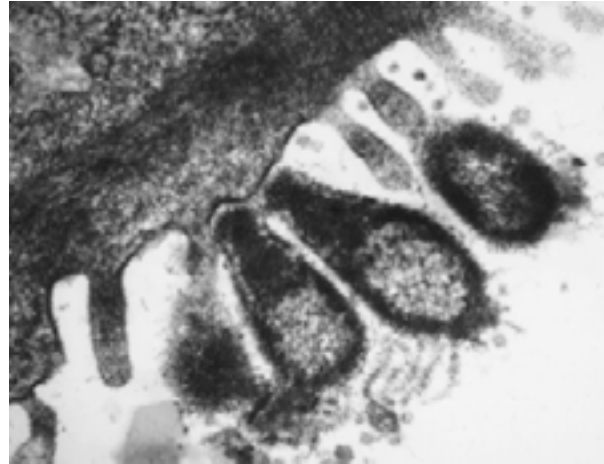
**Naola Ferguson-Noel, DVM, MAM, PhD**

**Professor, Department of Population Health, Poultry Diagnostic and Research Center**

- Bacteria
- No cell wall
- Smallest free-living organisms
- Smallest genome of any free-living organism
- Host specific

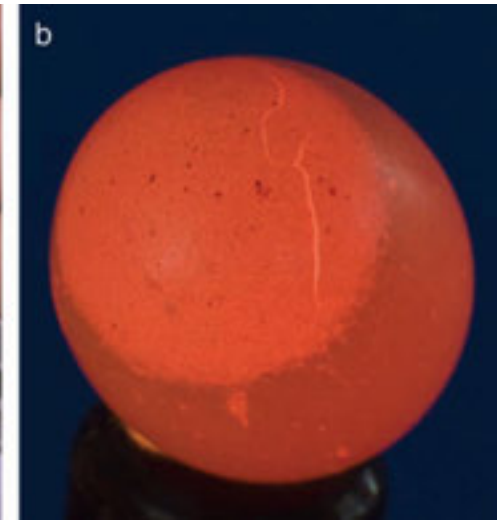
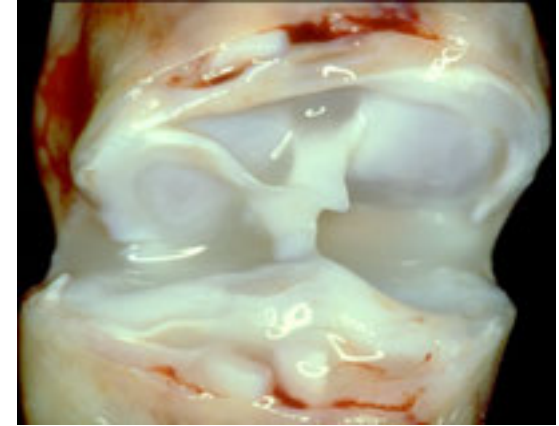


- Chronic respiratory disease (CRD) in chickens
- Infectious sinusitis in turkeys



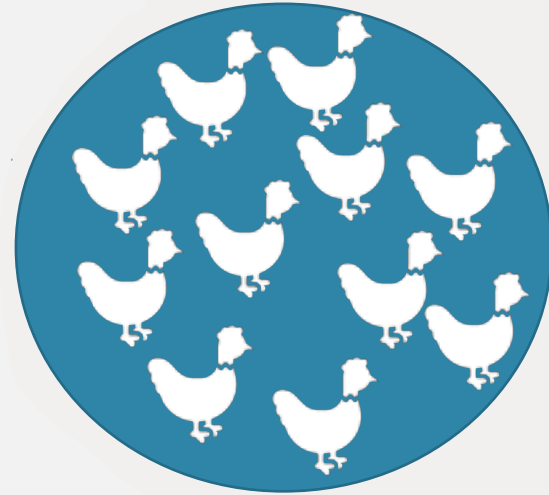


- Synovitis
- Respiratory disease
- Eggshell defects (EAA)
- Infection may be silent



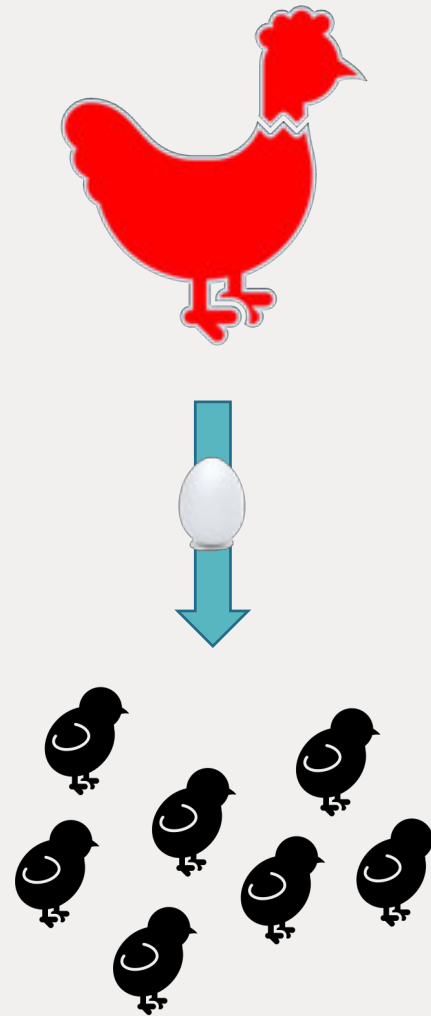
Feberwee, A., J. J. de Wit, and W. J. Landman Induction of eggshell apex abnormalities by *Mycoplasma synoviae*: field and experimental studies. *Avian Pathol.* 38:77-85. 2009.

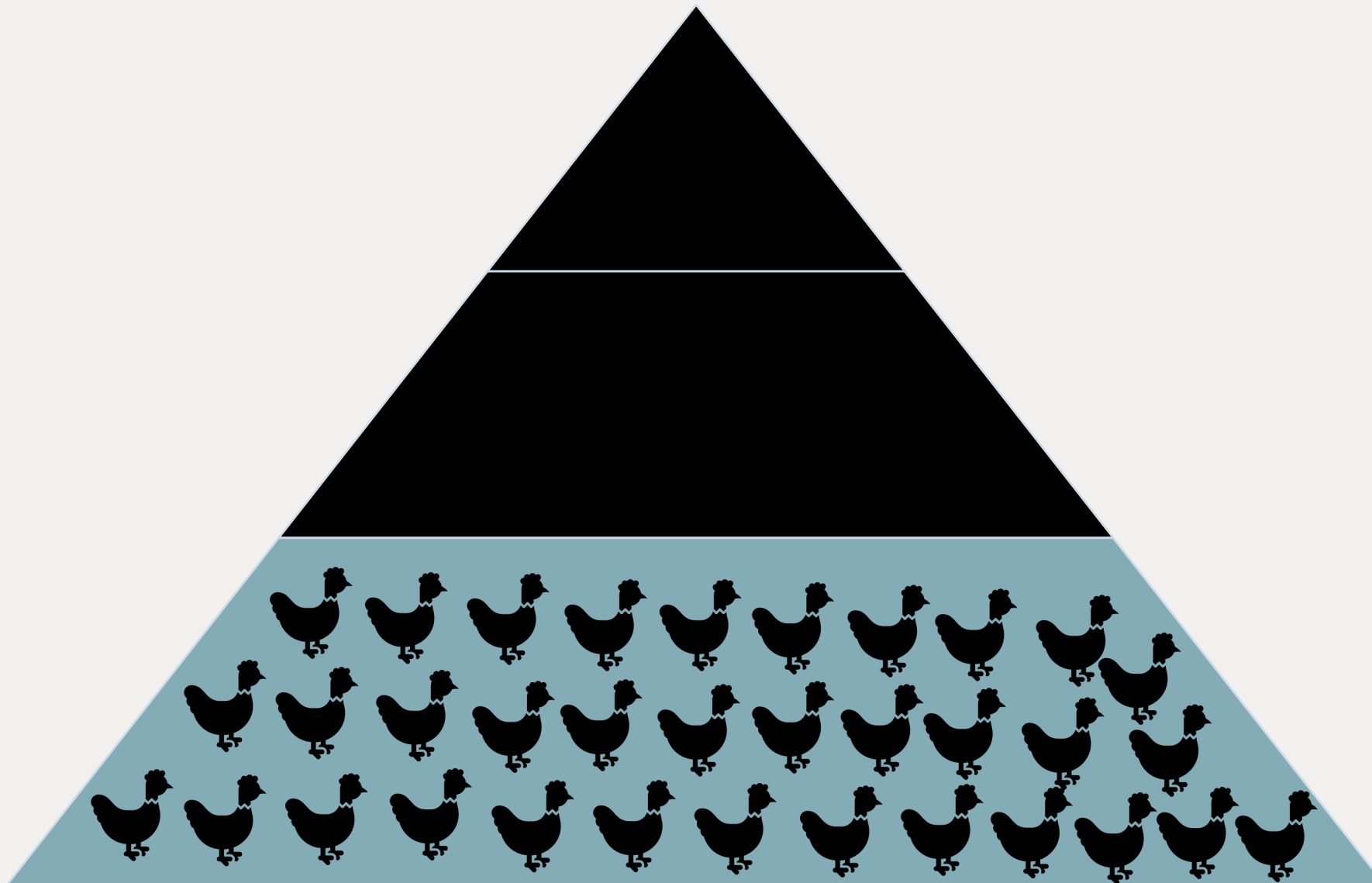


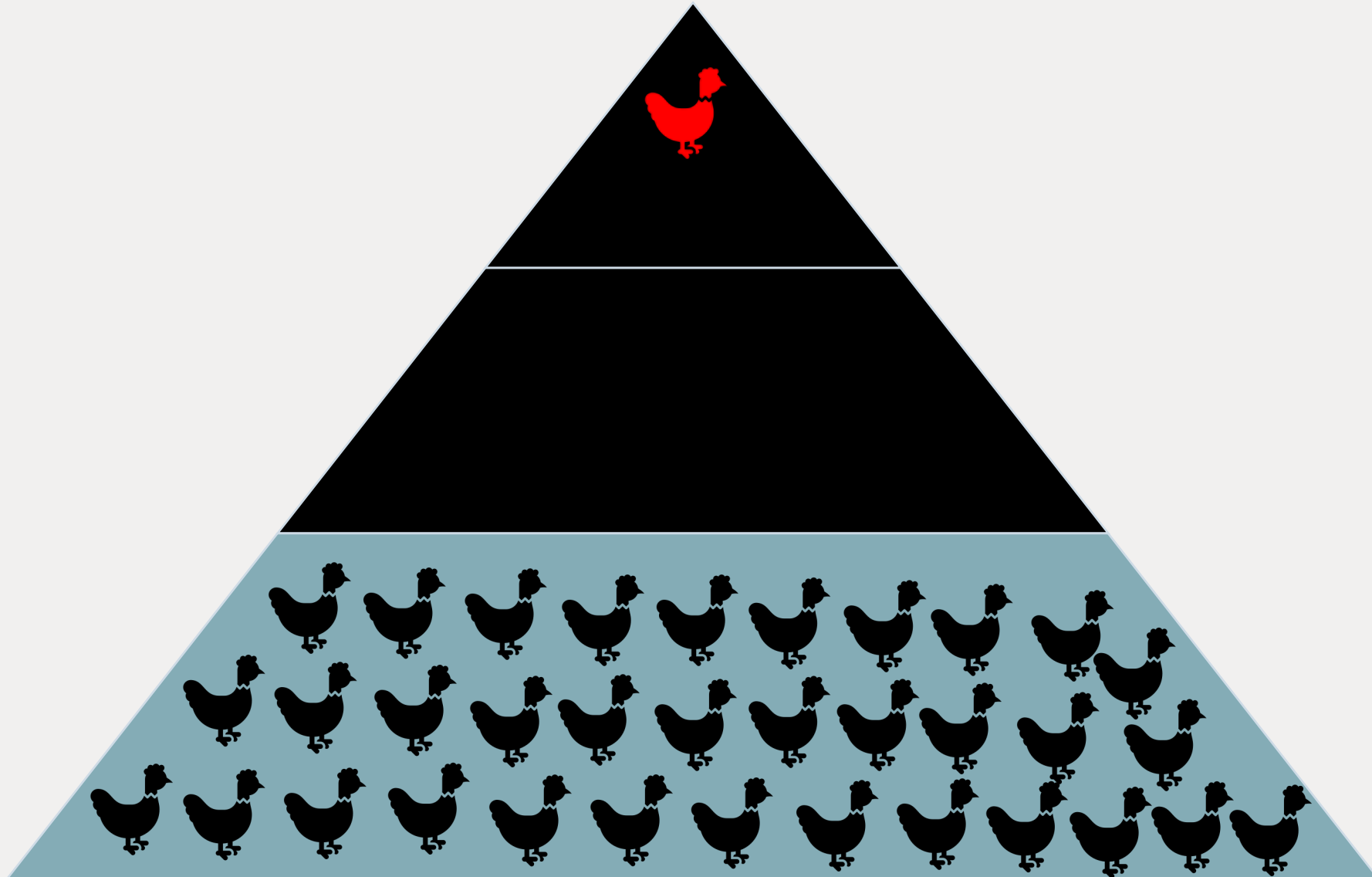


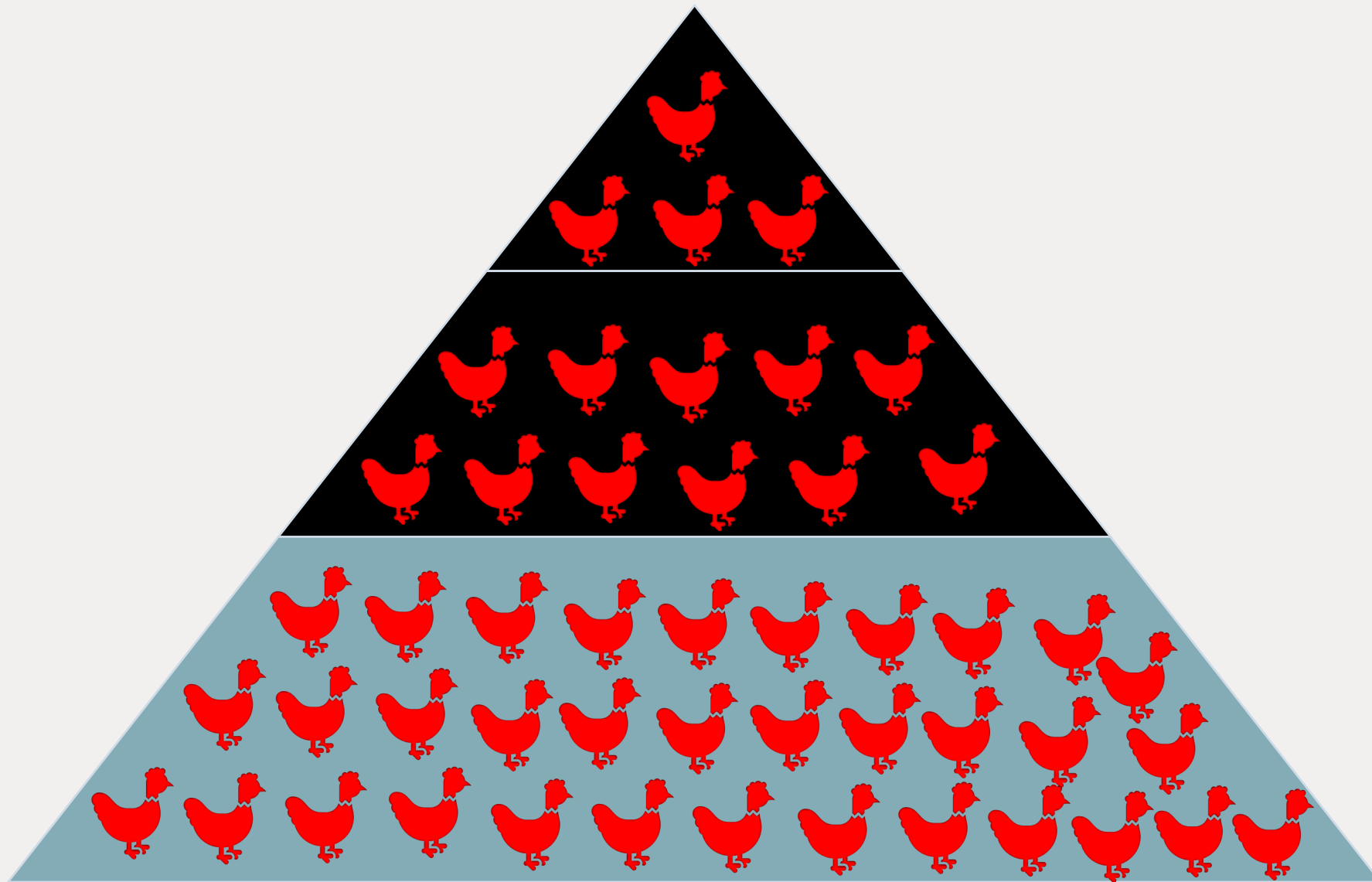
# Mycoplasma Transmission (Vertical)

22











## Short Term

- Eliminate Flock
- Quarantine/Isolate
- Medication

## Long Term

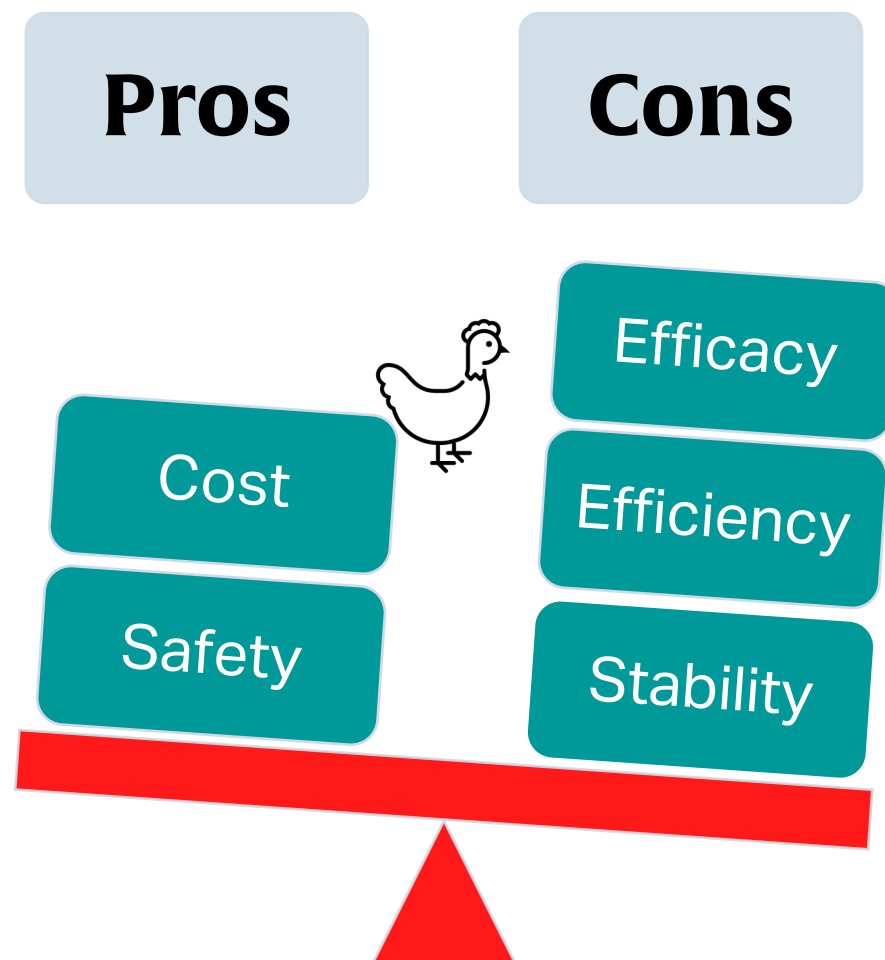
- Biosecurity
- Eliminate Flocks
- Medication
- Vaccination

- Prevent clinical disease
- Prevent egg production losses
- Reduce egg transmission
- Eradicate virulent field strains
- Reduce antibiotic usage



- Inactivated oil-emulsion bacterins
- Recombinant MG Vaccine
- Live vaccines

- Natural exposure
- Naturally occurring avirulent strains
- *In vitro* attenuated strains
  - Serial passage
  - Chemical mutagenesis
  - Targeted mutagenesis
    - Gene deletion
  - Synthesis







## **Naola Ferguson-Noel, DVM, MAM, PhD**

**University of Georgia, Poultry Diagnostic & Research Center**

953 College Station Rd., Athens, GA 30602-4875

Phone: (706) 542-3068    Lab: (706) 542-5646

[naolaf@uga.edu](mailto:naolaf@uga.edu)

<http://vet.uga.edu/avian>

# Best-in-class poultry mycoplasma vaccines



**Dr. Nathalie Desloges, PhD**  
**Global Project Leader**

Ecovaxxin® MG  
£15.4m  
5 Year Peak Sales  
1Q'25 (USA)  
1<sup>st</sup> Approval

Ecovaxxin® MS  
£11m  
5 Year Peak Sales  
2Q'25 (USA)  
1<sup>st</sup> Approval



# Ecovaxxin® MS (*M.synoviae* vaccine)

A new and improved solution for an under-served market



Poultry will become the primary global meat source in the next 10 years




Global Economic impact of Mycoplasmas


£640m/year<sup>1</sup>




Respiratory infections




Reduced weight gain



10-20% egg losses<sup>2</sup>



5-20% chick mortality<sup>2</sup>



5-10% embryo mortality<sup>2</sup>



5-10% meat condemned<sup>2</sup>



University of Georgia partnership for a best-in-class vaccine with superior efficacy and reliable supply, underlining ECO's leadership position as the mycoplasma solution provider

1. Hennigan et al., (2012)  
2. Stipkowits & Kempt, 1996; Mohammed et al., 1987



Key Attributes




### Safe Technology

-  Naturally attenuated US Isolate
-  Proven safe at high doses
-  Free of antimicrobial resistance genes



### Superior Label Claims Against

-  **Airsacculitis**  
(respiratory tract inflammation)
-  **Synovitis**  
(foot pad & joint inflammation)
-  **Ovarian regression**  
(egg production loss)



### Differentiable Presentation

-  Formulation with more convenient storage attributes

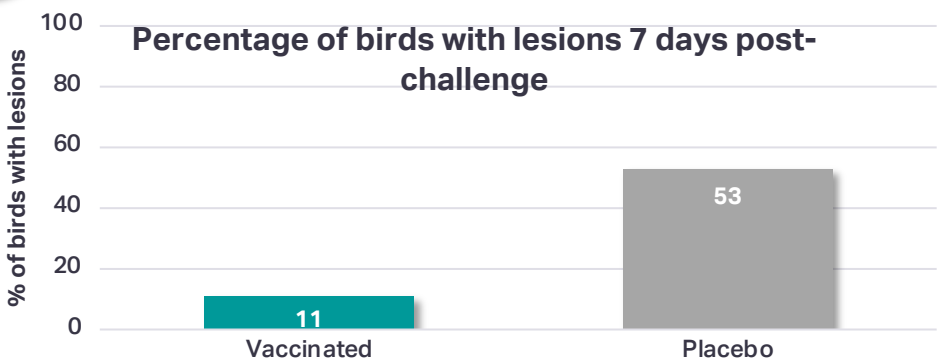


# Ecovaxxin® MS (*M.synoviae* vaccine)

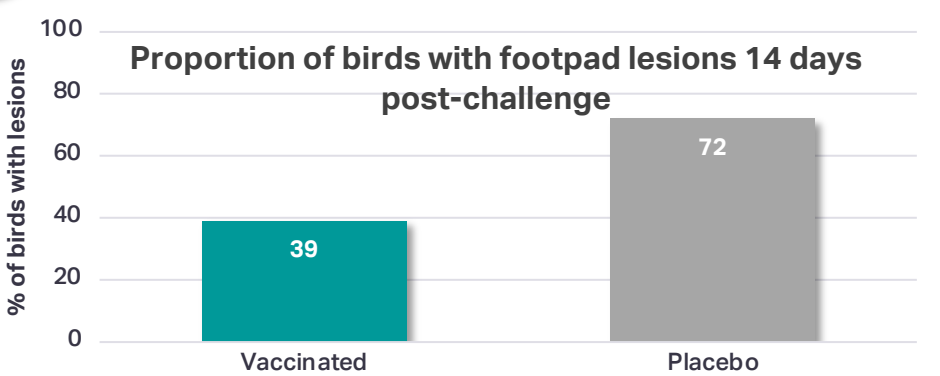
## Performance



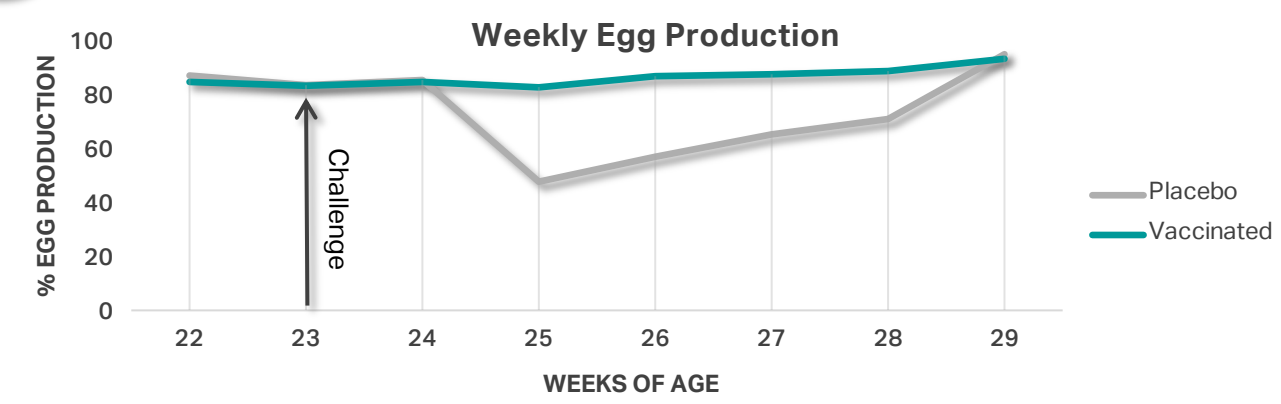
**AIRSACCULITIS:** Excellent protection against respiratory tract inflammation



**SYNOVITIS:** Significant reduction in severity of foot pad lesions



**OVARIAN REGRESSION:** Vaccination protects against egg production loss







Upcoming Goals



Complete pivotal efficacy studies



Complete production of consistency batches



Complete duration of immunity study



Complete field safety trials in the US and Europe



Complete technology transfer to CDMO partner



Complete all USDA submissions



Status of USDA submissions



# Game changing porcine biologicals



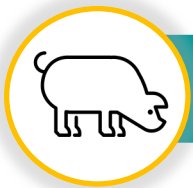
**Dr. Brian Martinson, PhD**  
**Global Project Leader**

Ecovaxxin®  
PCV2/MHP

£44m  
5 Year Peak Sales  
2Q'27 (USA)  
1<sup>st</sup> Approval

PRRSV mAb

£60.8m  
5 Year Peak Sales  
2Q'27 (USA)  
1<sup>st</sup> Approval



# Ecovaxxin® PCV2/MHP (Bivalent Respiratory Vaccine)

## Impact of PCV2 and Mhp



Porcine circovirus type 2 (PCV2)  
Severe economic losses



*Mycoplasma hyopneumoniae* (Mhp)  
Reduction in production profits



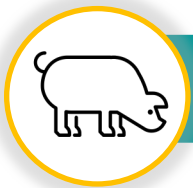
<sup>1</sup>PCV2 and MHyo - Global Swine (msd-animal-health-swine.com)

<sup>2</sup>Alarcon et al, Cost of post-weaning multi-systemic wasting syndrome and porcine circovirus type-2 subclinical infection in England – and economic disease model. Prev Vet Med (2013); Jun 1;110(2):88-102.

<sup>3</sup>S.Brockmeier et al (2002); Porcine Respiratory Disease Complex; Polymicrobial Diseases; ASM Press. Ch. 13.

<sup>4</sup><https://vetmed.iastate.edu/vdpam/FSVD/swine/index-diseases/mycoplasma-pneumonia>

<sup>5</sup>C.Diaz et al (2021); Financial Analysis of Herd Status and Vaccination Practices for PRRSV, SIV, and Mhp in Farrow-to-Finish Pig Farms Using a Bio-Economic Simulation Model; Frontiers in Veterinary Science, Nov2020 Vol. 7.



## Ecovaxxin® PCV2/MHP (Bivalent Respiratory Vaccine)

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### Why a PCV2 / Mhp combo?



Ecovaxxin® PCV2/MHP will be the first swine vaccine delivered to the market by ECO Animal Health and will be the CORNERSTONE of our Swine Biologics program



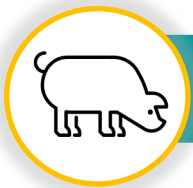
Many Animal Health companies have a PCV2 and/or Mhp vaccine

- Not all have a Ready-to-Use (RTU) combination
  - Not all RTU's have great safety
  - Not all RTU's have great efficacy



Opportunity to take market share

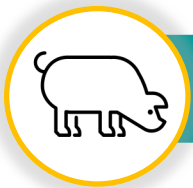




# Ecovaxxin® PCV2/MHP (Bivalent Respiratory Vaccine)

## Key Attributes

<div></div> <div><h3>PCV2</h3><div><div><b>Proven Technology</b> PCV2 capsid protein virus-like particle (vlp)</div><div><b>With a twist</b> Unique PCV2 capsid sequence used to provide cross-protection against multiple genotypes (PCV2a, PCV2b, PCV2d)</div></div></div>	<div></div> <div><h3>Mhp</h3><div><div><b>Proven Technology</b> Inactivated, whole culture of <i>M. hyopneumoniae</i></div><div><b>With a twist</b> Using a recent (2019) European isolate</div></div></div>	<div></div> <div><h3>Adjuvant</h3><div><div><b>Proven Technology</b> Oil-in-water emulsion</div><div><b>With a twist</b> Addition of a copolymer immunostimulant</div></div></div>
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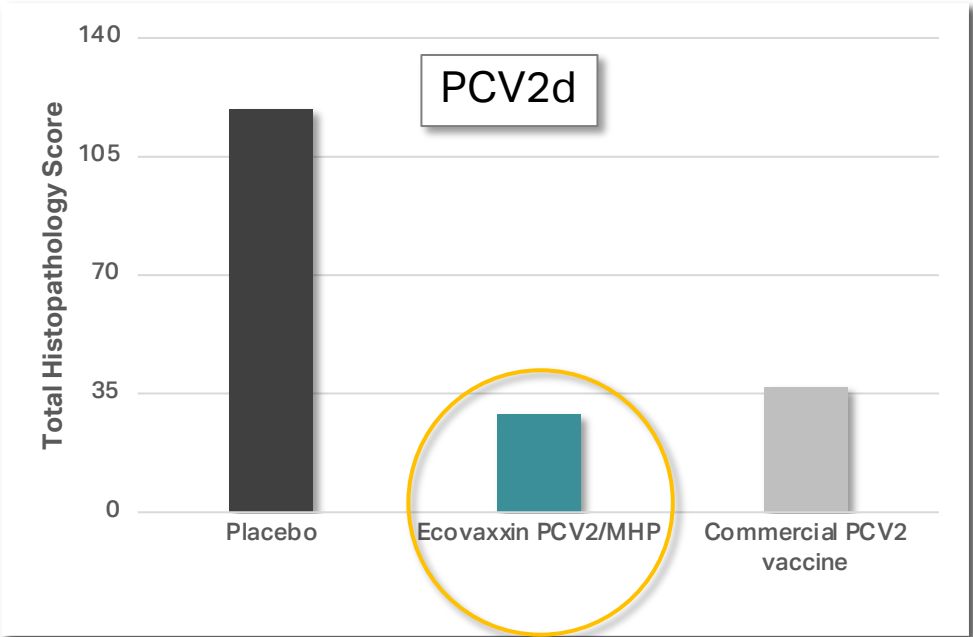
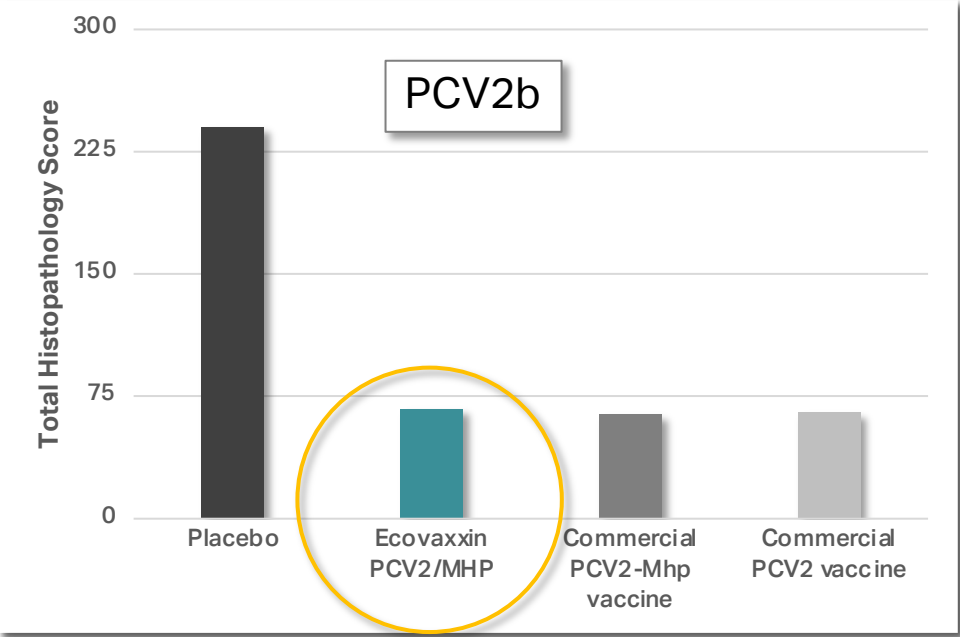


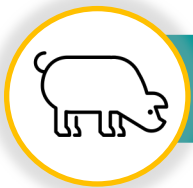
# Ecovaxxin® PCV2/MHP (Bivalent Respiratory Vaccine)

## Performance



Ecovaxxin® PCV2/MHP protects against both PCV2b and PCV2d, with similar efficacy to commercial vaccines



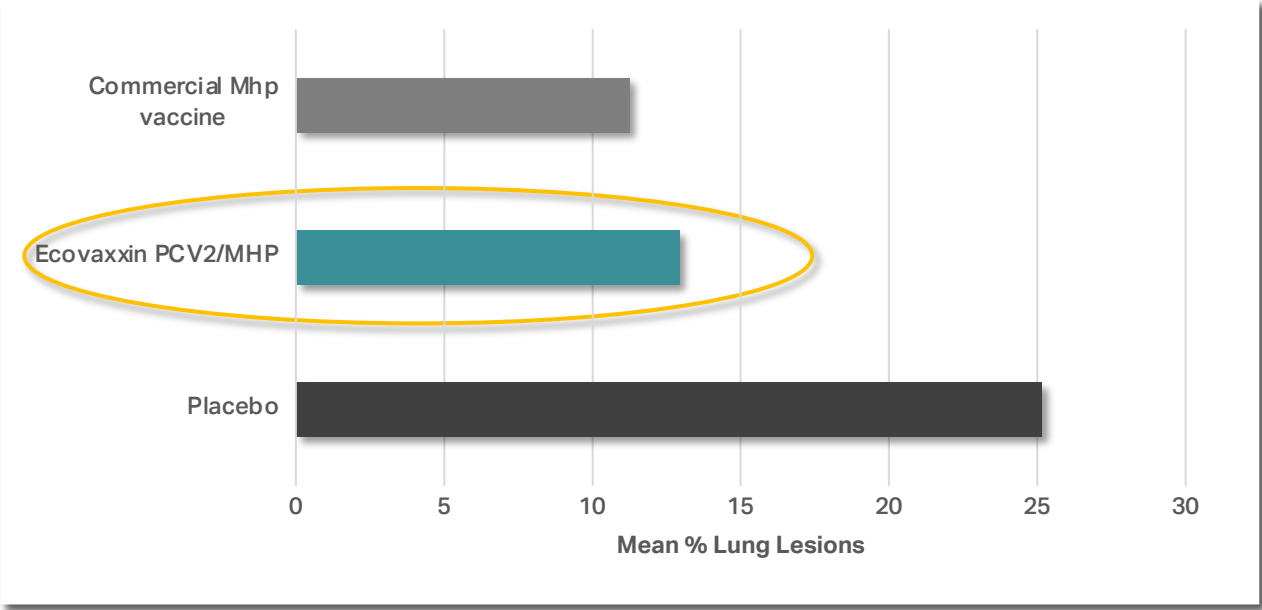


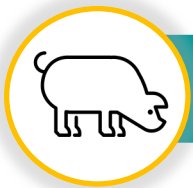
# Ecovaxxin® PCV2/MHP (Bivalent Respiratory Vaccine)

## Performance

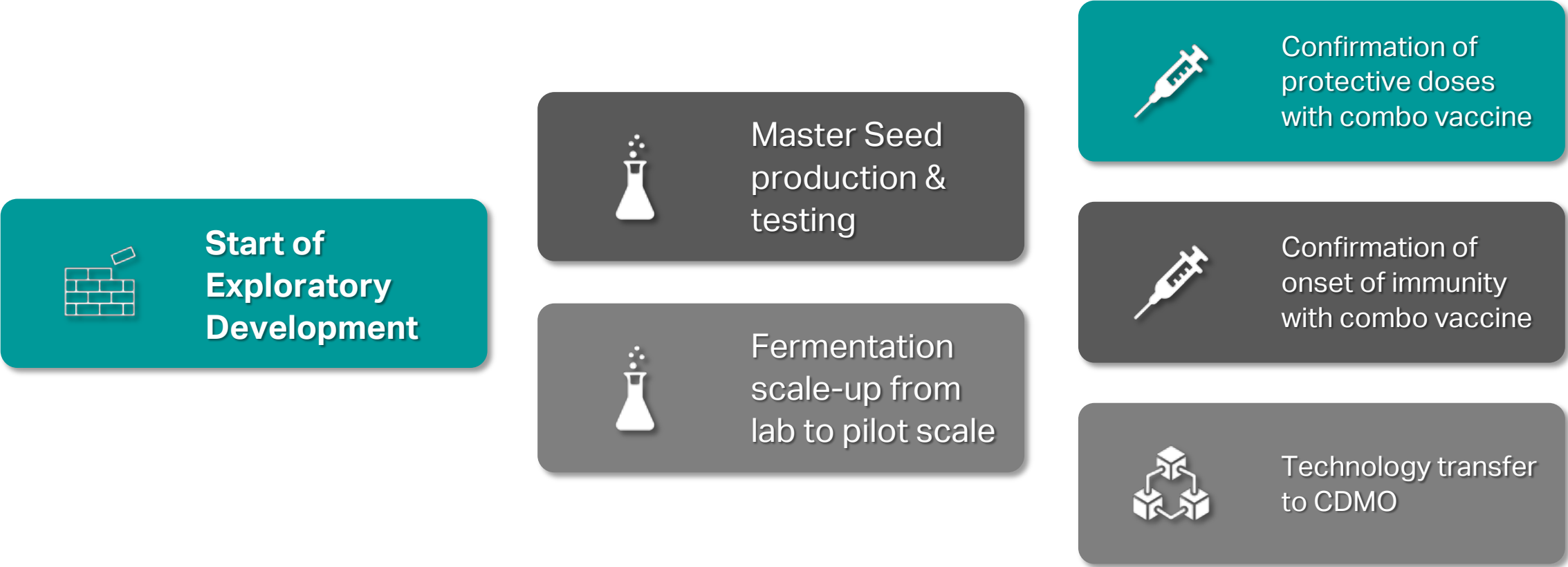


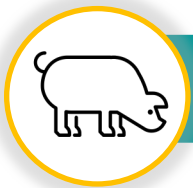
Ecovaxxin® PCV2/MHP protects against Mhp challenge, with similar efficacy to commercial vaccines





R&D stage gate transition to Development 4Q'23





# First-in-Class PRRSV\* Monoclonal Antibody (mAb)



A new approach to PRRSV that addresses:



Annual losses



Poor vaccination success



Virus variation  
High transmission rates  
Recombination  
Spread of modified live  
Limited cross-protection

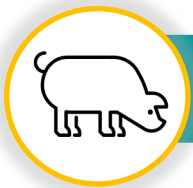
\* Porcine Reproductive and Respiratory Syndrome Virus

<sup>1</sup> Valdes-Donoso P, Alvarez J, Jarvis LS, Morrison RB, Perez AM. Production Losses From an Endemic Animal Disease: Porcine Reproductive and Respiratory Syndrome (PRRS) in Selected Midwest US Sow Farms. *Front Vet Sci.* 2018 May 16;5:102.

<sup>2</sup> C.Renken et al (2021); Application of an economic calculator to determine the cost of porcine reproductive and respiratory syndrome at farm-level in 21 pig herds in Germany; *Porcine Health Manag.* 2021 Jan 4;7(1):3

<sup>3</sup> H.Nahues et al (2017); Cost of PRRSV at individual farm level – An economic disease model; *Preventive Veterinary Medicine*, (142) 01Jul17, pg.16-29.





# First-in-Class PRRSV Monoclonal Antibody (mAb)

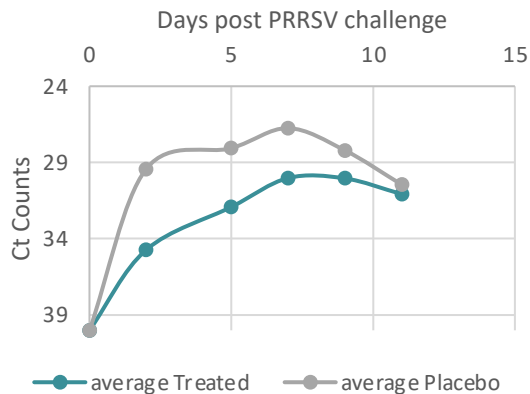
## Performance



**Proven Efficacy in Diseased Pigs (PRRSV, EU variant)**  
*Improvement in all four Clinical Endpoints:*



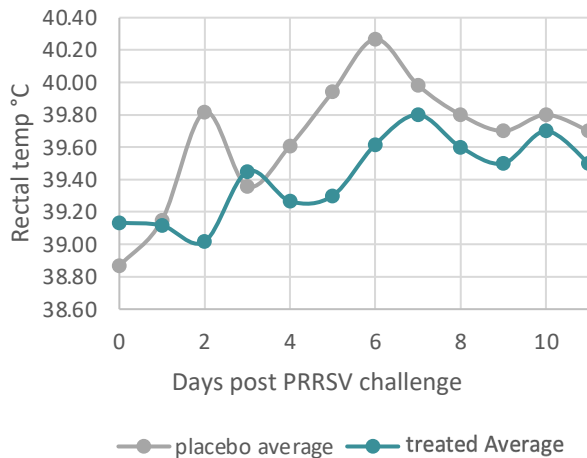
### Viraemia



At least **1 log (10x) lower viral load** on Days 2, 5 and 7 post-challenge ( $P<0.001$ )



### Rectal Temperature



**45** observations of **fever** ( $> 40^{\circ}\text{C}$ ) in Placebo vs. only **15** in Treated pigs ( $P<0.001$ ).



### Lung Lesions

**Four** (4/12) pigs in the placebo group had **severe lung lesions** (33%) vs. **none** in the treated group

Severe lung lesions means **> 15%** lung lobes affected

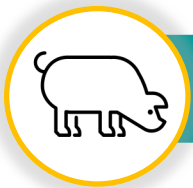


### Bodyweight

↑ Average Daily Weight Gain (ADWG)

**1kg bodyweight gain vs non-treated (10% increase)**

Statistically greater ADWG ( $P=0.005$ )



# First-in-Class PRRSV Monoclonal Antibody (mAb)

## Upcoming Goals



Continued improvement of protective duration



Evaluate efficacy against North America PRRSV variant



Developability assessment for lead candidates



Dose refinement in pigs

# Innovation in the treatment of swine respiratory disease

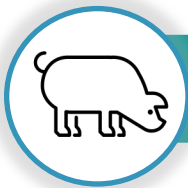
Novel  
Antimicrobial

£6.0m  
5 Year Peak Sales

1Q'27 (EU)  
1<sup>st</sup> Approval



**Dr. Alfonso Lopez, DVM, Dip. ECPHM, PhD**  
**Senior Clinical Development Manager**



# Novel Antimicrobial

## Innovation in the treatment of respiratory disease



Swine respiratory disease (SRD) is a highly contagious, deadly mixed respiratory infection affecting all stages of pig production with huge global economic impact



Global  
Economic  
impact of SRD:

**£1.5b/year<sup>1</sup>**



Major losses



£3.3-£4.5 per  
finishing pig<sup>1</sup>

Multiple doses



Often  
ineffective

Consequences



Reduced  
animal  
welfare

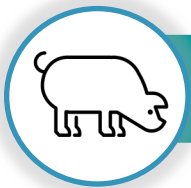


Increased  
production  
costs



We have partnered with a biotech company to develop a unique treatment which provides a meaningful alternative to the current standard of care

1. : PROHEALTH: New analysis of pig disease costs (2015)



## Key Attributes



### Efficacy

-  Long duration of efficacy with one single shot
-  Broader protection than other market leading 1-shot products



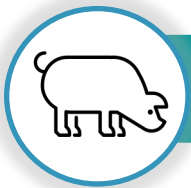
### Safety

-  Improved animal welfare
-  Low risk of antimicrobial resistance & non-shared with Human Health



### Innovation

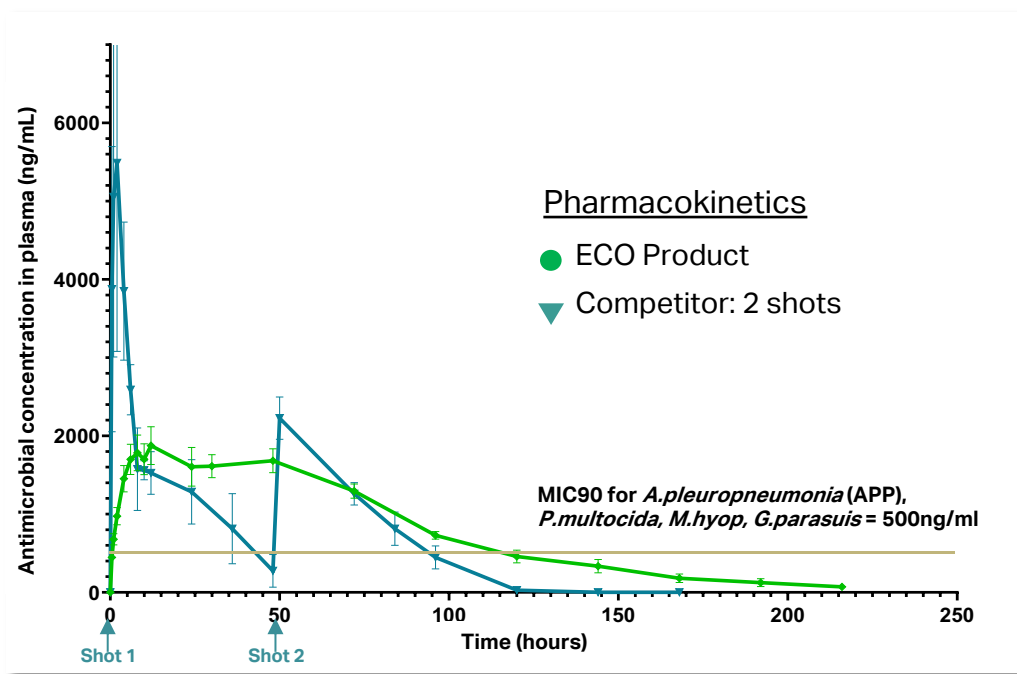
-  Controlled release technology
-  A different class and spectrum of activity to Aivlosin®
-  Less labour



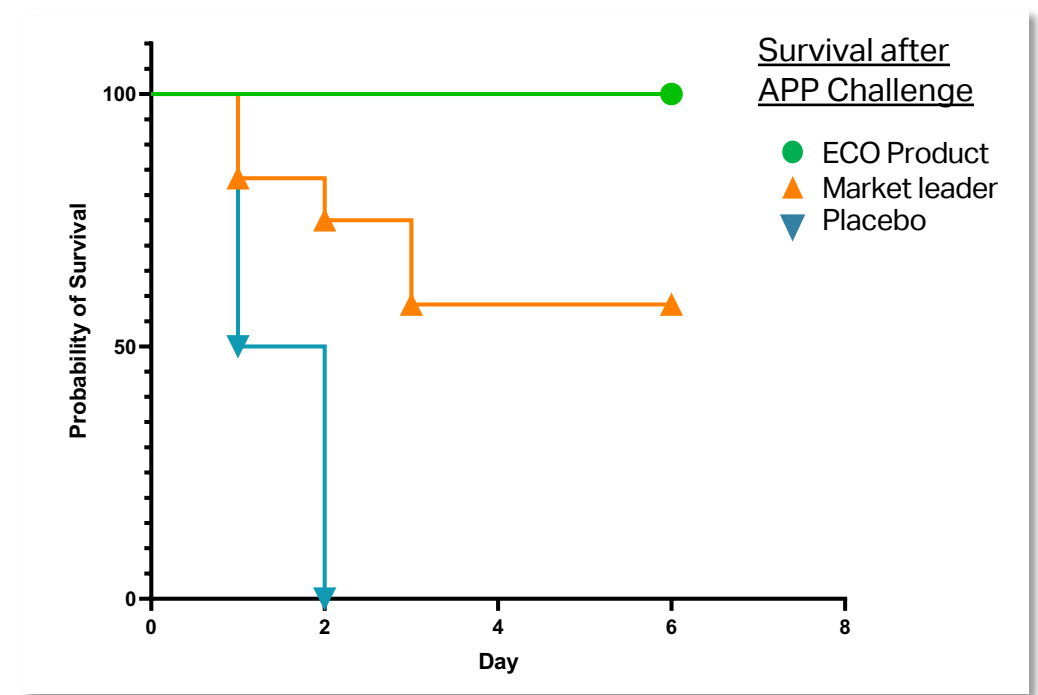
## Performance



A single shot of a novel long-acting formulation achieves the same therapeutic cover as 2 shots of a competitor product



Higher efficacy than the market leader



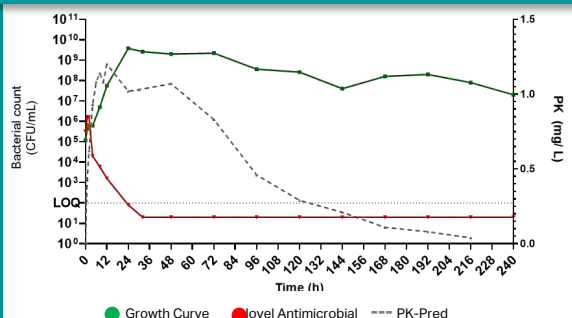




## Hollow Fiber Infection Model: Cutting edge methodology, inspired by Human Health



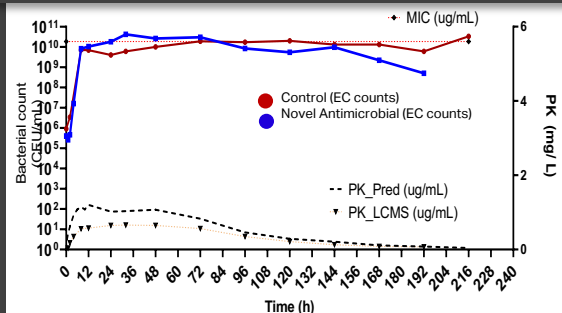
In vitro exposure of *P. multocida* to ECO product PK profile results in eradication



Low risk of resistance development in the susceptible population



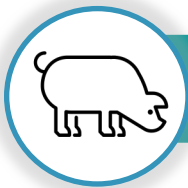
No changes in MIC after long exposure to sub MIC con<sup>c</sup> = no indication of resistance



Low risk of resistance development in bacteria relevant for humans



*"Artificial pig" to study risk of antimicrobial resistance*



## Upcoming Goals



Transition to Full Development



Scale-up Manufacturing



Complete pre-clinical dose confirmation program



Publish novel Hollow Fiber data to help clear the path for registration

# Novel approaches to control enteric disease in poultry



**Dr. Alfonso Lopez, DVM, Dip. ECPHM, PhD**  
**Senior Clinical Development Manager**

Enteric  
Disease Biological

£36.6m  
5 Year Peak Sales

4Q'27 (USA)  
1<sup>st</sup> Approval



## Innovation in the Treatment of Enteric Disease



Necrotic enteritis (NE) caused by *C.perfringens* type A, is a significant emerging disease in broilers since the ban of antimicrobial growth promoters in EU



Global Economic impact of necrotic enteritis:

**£4.9b/year<sup>1</sup>**

(~0.04 GBP per bird)<sup>2</sup>



Supports the urgent need to provide effective alternatives to antimicrobials and underwrites our commitment to the strategic goals of the One-Health Initiative

Subclinical disease



Significant production losses

Acute disease



High mortality rates

Control methods




Direct - antibiotics  
Indirect - anticoccidials


1. BROOM, L. (2017). Necrotic enteritis; current knowledge and diet-related mitigation. *World's Poultry Science Journal*, 73(2), 281-292.  
2. Van der Sluis W. Clostridial enteritis - a syndrome emerging world wide. *World Poultry*. 2000;16:56-57.2. Stipkowits & Kempt, 1996; Mohammed et al., 1987




## Key Attributes



### Efficacy



Mode of action is neutralization of *C. perfringens* toxins.



Model endpoints include lesion scores, mortality and production parameters



### Administration



Easily administered to chickens via oral route (in water or in feed)



Mass administration is convenient for customers and +ve for animal welfare



### Innovation



Innovative new approach exploiting antibody technology



Attractive alternative to traditional antimicrobials

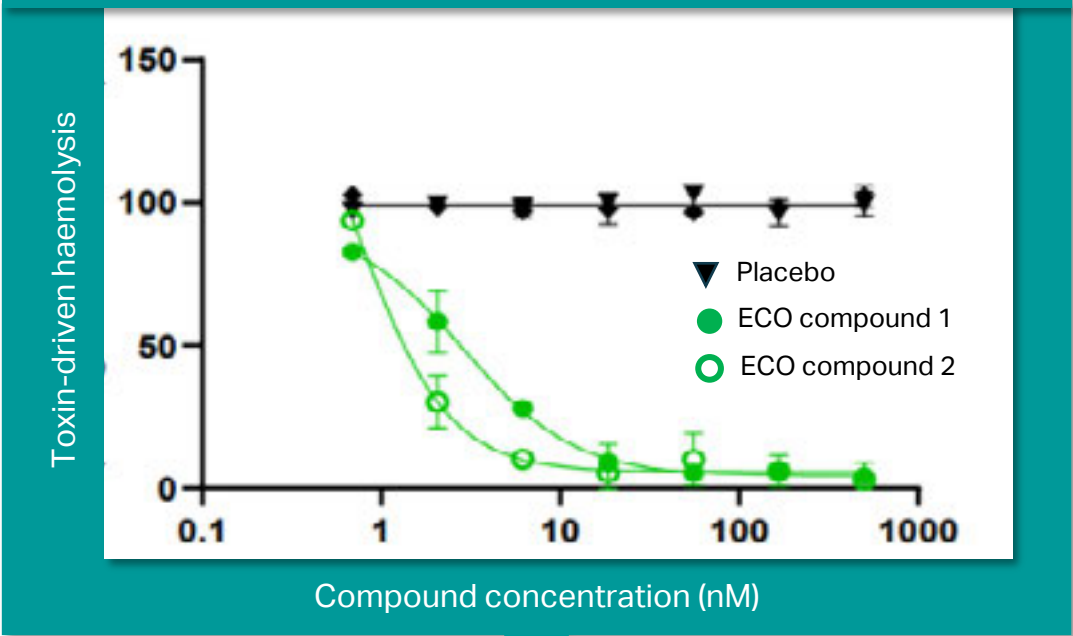




## Performance



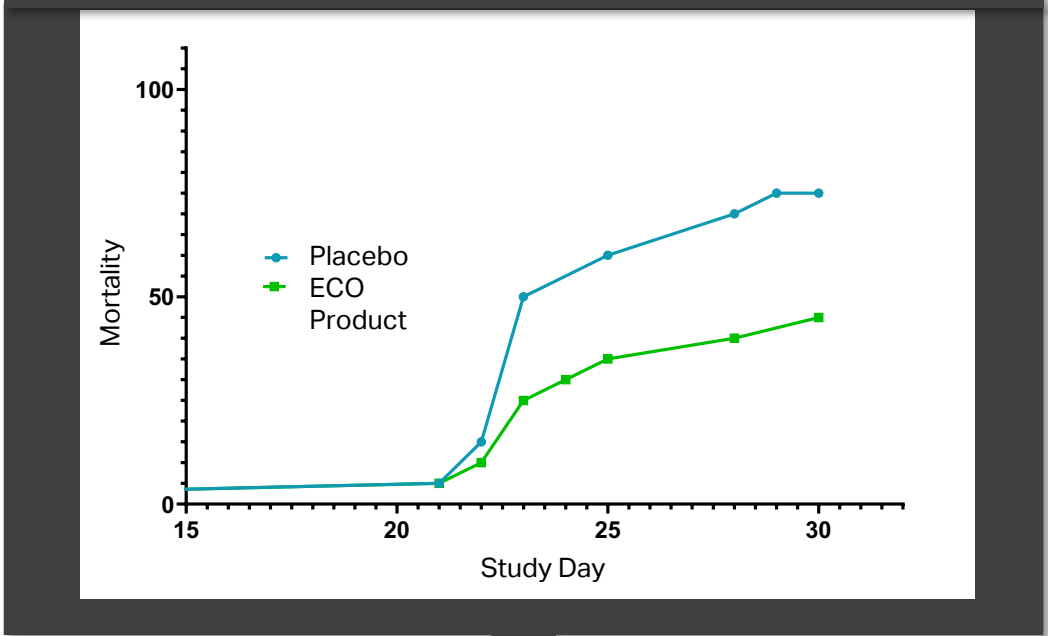
### In-vitro potency



Lead Candidates highly potent at neutralizing *C. perfringens* toxins in-vitro



### Efficacy in severe NE in-vivo challenge study: Probability of a pen losing all birds due to NE



Lead candidate reduced the number of empty pens resulting from necrotic enteritis mortality ( $P=0.0477$ )





## Upcoming Goals



Demonstrate efficacy of novel delivery method



Advance direct administration strategy in parallel



Define manufacturing process



Transition the project to Exploratory Development

# Biologicals production



**Dr. Michael Huether, MS, PhD**  
**Senior Consultant**



Global Supply

## EU Based CDMO

Global CDMO for all markets  
except China

Supply finished labeled product  
to US for US-LATAM release

US ECO Quarantine Site\* to  
release product into US market



China for China

## Joint Venture with China Partner

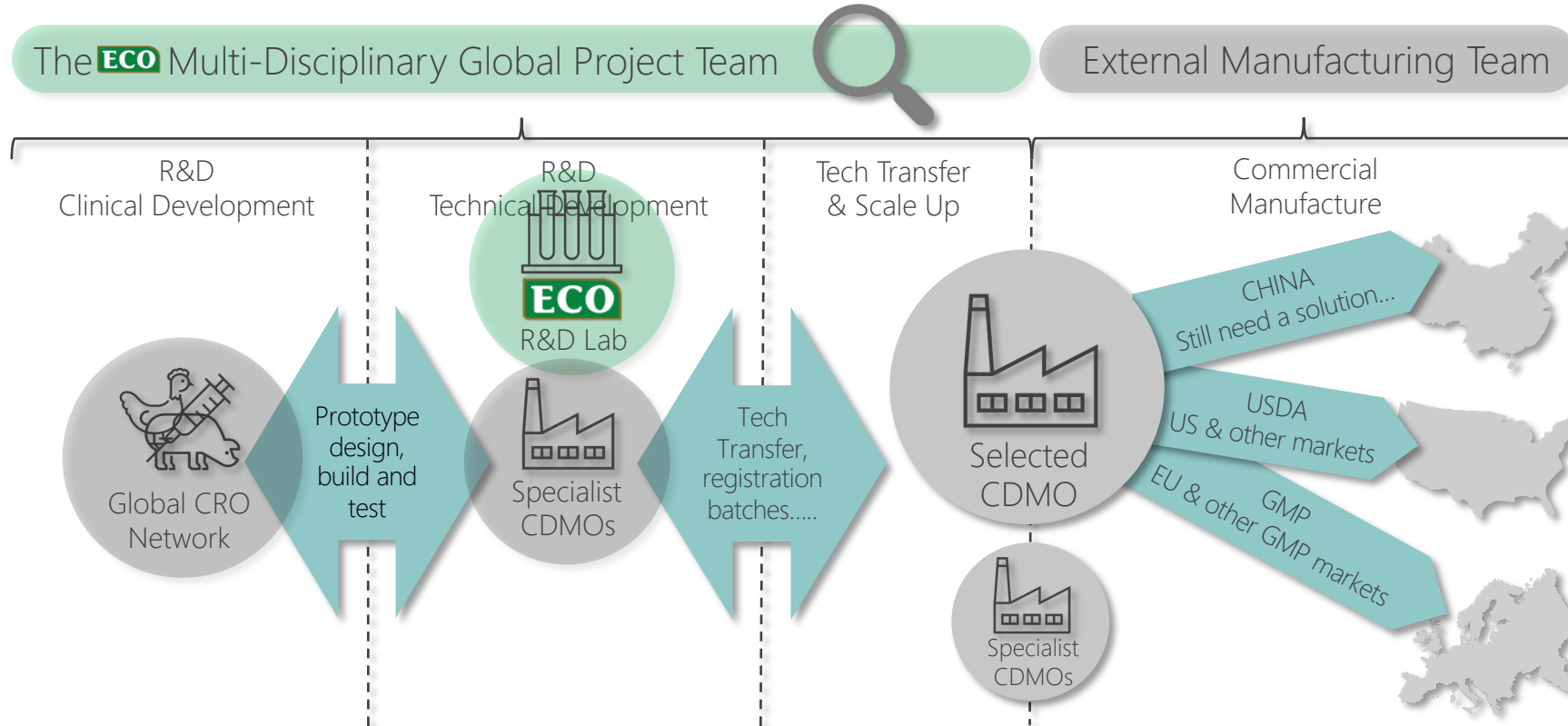
Build ECO R&D lab and cGMP  
Pilot lab by 1Q2025

Longer term, build cGMP  
Commercial plant

\*ECO announced at the USDA as future permittee for the importation of vaccines in the USA

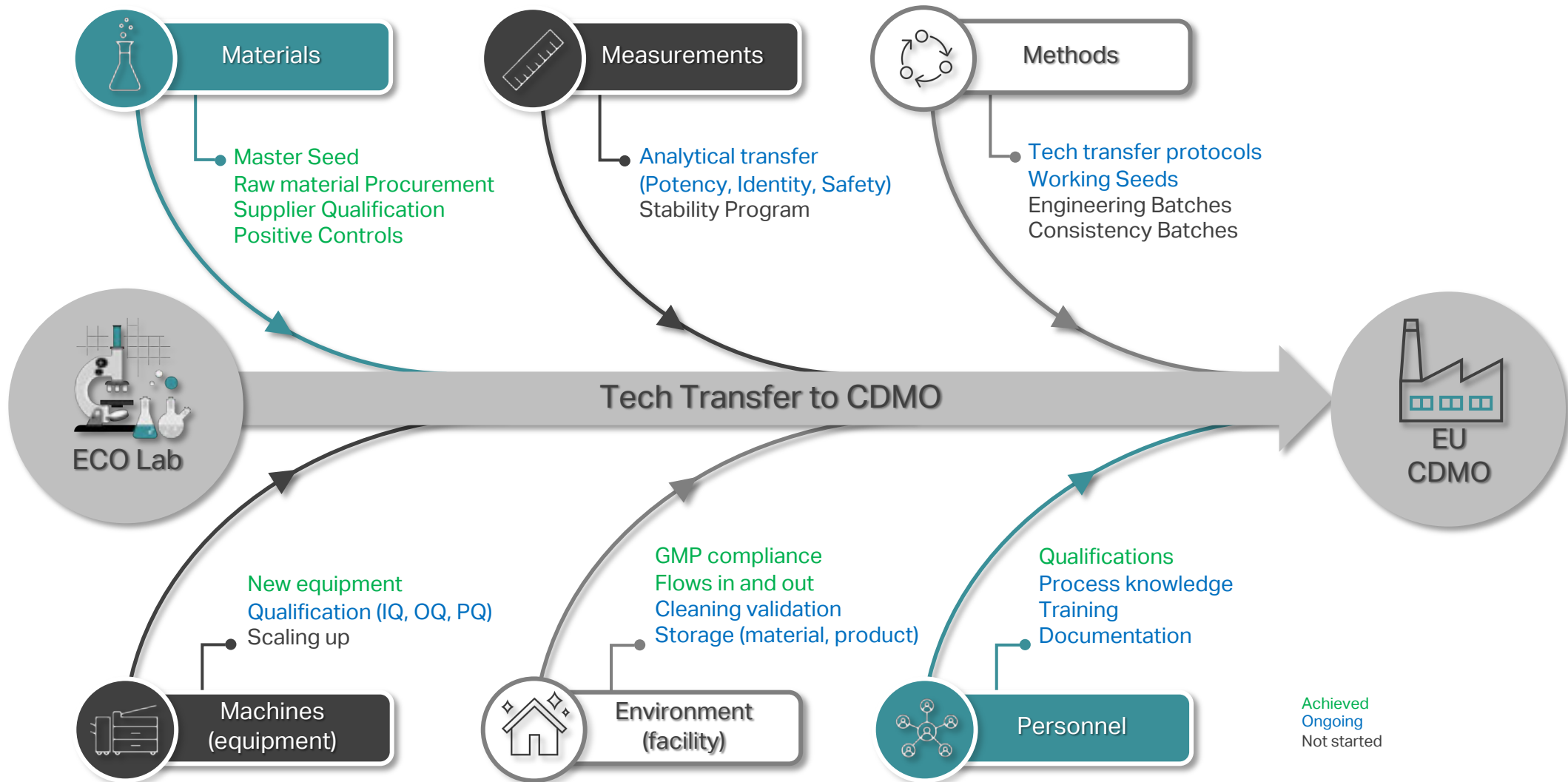
# Laboratory support to our R&D Programme

61



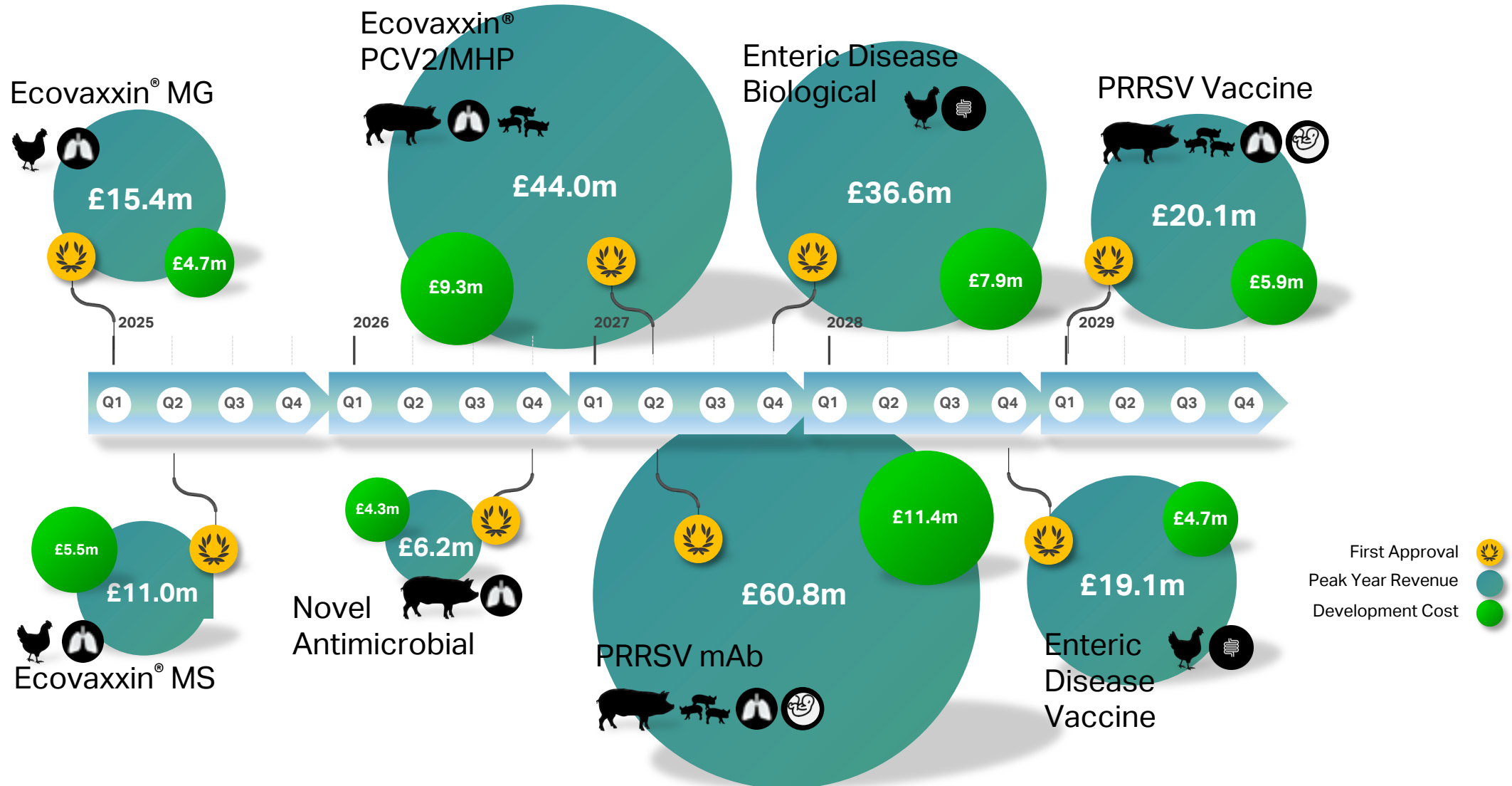
# Ecovaxxin® MS Tech transfer to EU CDMO

62



# First approvals – Clinical & Late-Stage Assets

63





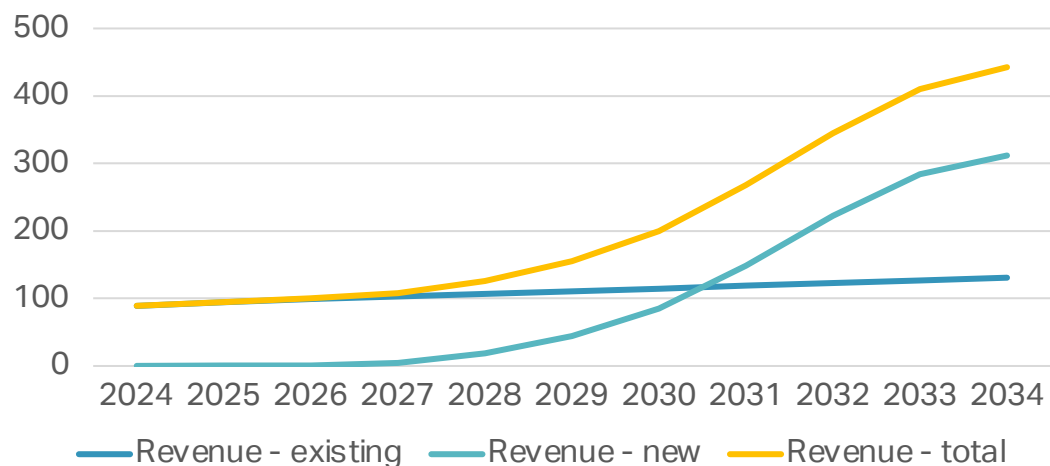
- We have heard the science – what about the value?
- Portfolio has a mix of risks and returns
- Portfolio has a mix of near to market (late stage) and early stage
- All projects are subject to rigorous business modelling at all stages, incorporating:
  - Animal population statistics by market, addressable market, disease rates, vaccination rate
  - Phased market entry
  - Competitor products, pricing and USP's
  - Production costs over time
  - Development costs, launch costs, incremental S,G&A
- Sunk cost does not influence decision to pass through a stage gate
- Valuation expressed as Net Present Value (pre-tax cashflows) and contrasted with IRR, Payback, Risk, time to peak revenue, R&D funding commitment

# Incremental revenue and profits

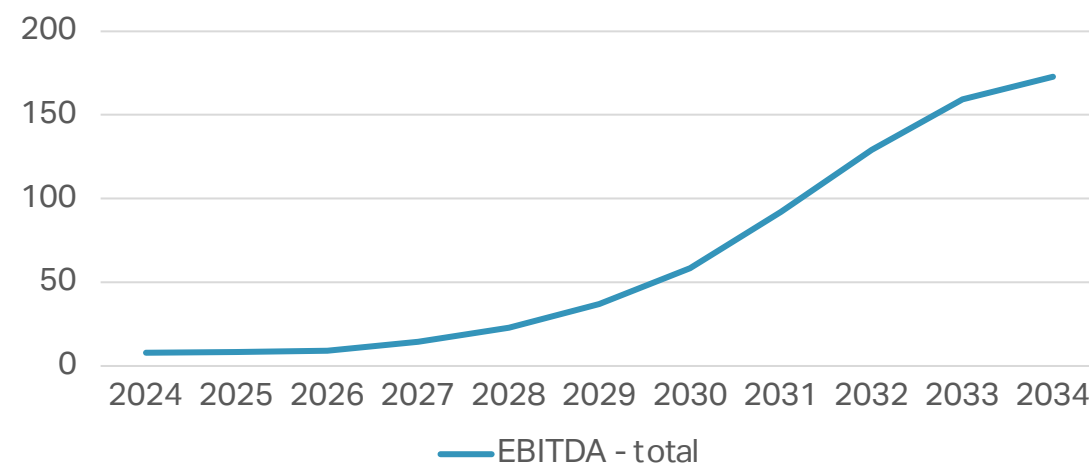
65

	R&D Costs (£'m)	PTRS	Sales Starting Year	Peak Year	Peak Revenue (£'m)	Peak EBITDA
ECOVaxxin® MG	5	76%	2025	2032	15	8
ECOVaxxin® MS	5	79%	2025	2032	11	7
Novel Anti Microbial	4	45%	2026	2033	6	4
ECOVaxxin® PCV2/MHP	9	32%	2027	2034	44	18
PRRSv mAb	11	14%	2027	2034	61	39
Necrotic Enteritis mAb	8	5%	2027	2034	37	10
Others	16	2-32%	2028/29	2035/36	148	76
Totals					320	162

10 year revenue



10 year EBITDA



# Key Modelling Assumptions

- Revenue by project derived by territory, by market share, from price per dose multiplied by volume and annually phased up to “peak” in each region
- Regional roll out:

	Year 0				Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7				Year 8				Year 9				Year 10			
Launching Plan	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
China																																												
Japan																																												
USA																																												
Canada																																												
Mexico																																												
Brazil																																												
Other LATAM																																												
Europe																																												
S&SE Asia																																												
MENAF																																												

- PTRS (Probability of Technical and Regulatory Success) = Probability of promotion to final development x regulatory risk
- Peak revenue reached 3 years after market entrance, remains at peak for 5 years, tapers to 10% of peak revenue by year 15
- WACC is 10%
- All new products are commercialised in China through the JV and no equity change is modelled
- Base case: Marketing costs 1% of revenue, Royalties 3% of revenue, incremental Headcount 3% of revenue
- Pre-launch costs of £50-200k in each market

# Poultry Mycoplasma Vaccines

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Addressable market size (£'m)

**MG**

£41m

**MS**

£44m

Peak year market share – world ave

37%

25%

R&D cost to go

£4.8m

£5.5m

PTRS

76%

79%

Peak annual revenue

£15m

£11m

Peak annual EBITDA contribution

£8m

£7m

NPV – full lifecycle

£18m

£17m

IRR

44%

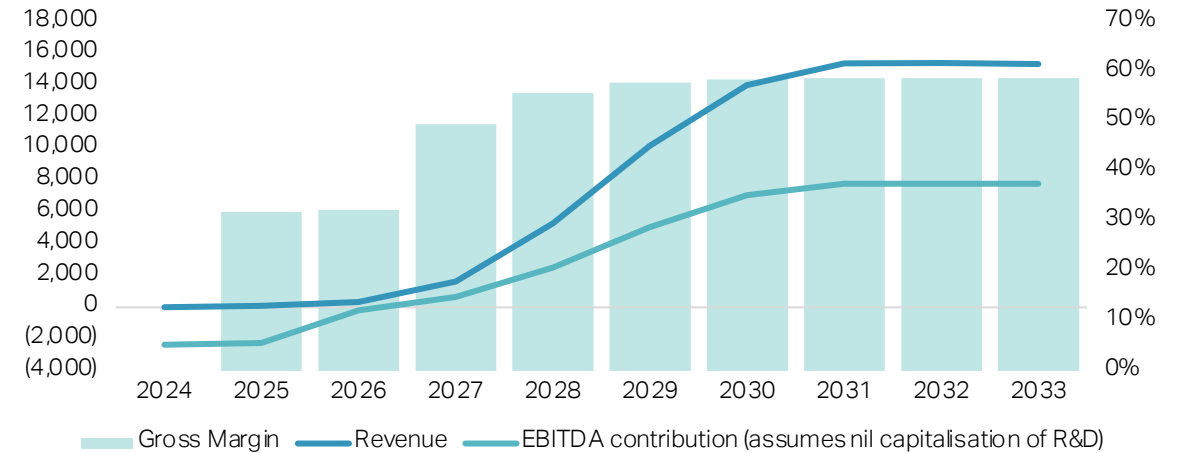
46%

Payback period

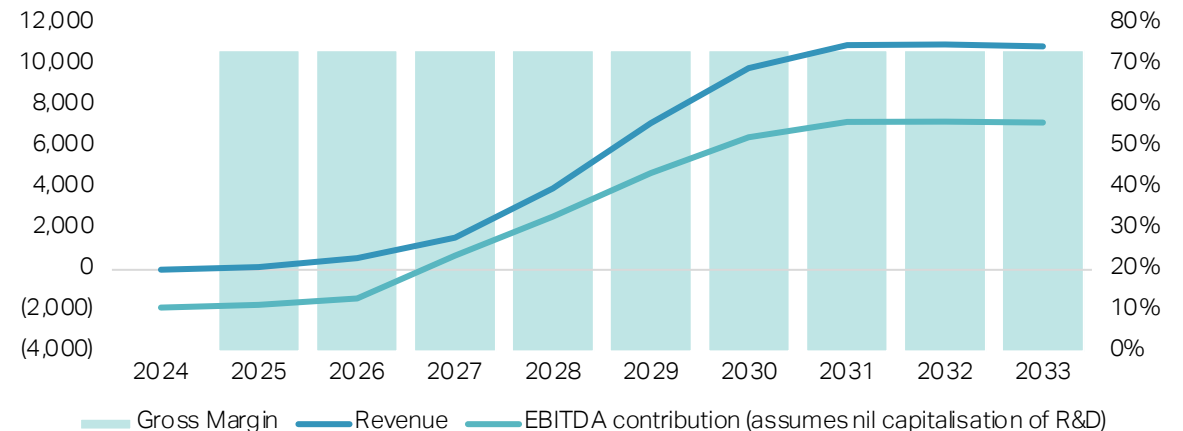
6 years

6 years

## ECOVaxxin® MG P&L

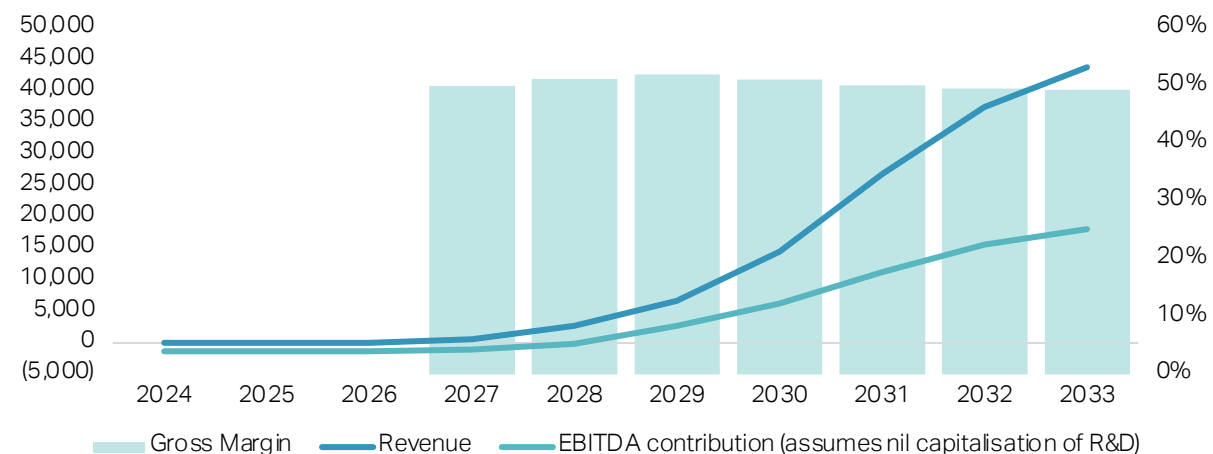


## ECOVaxxin® MS P&L

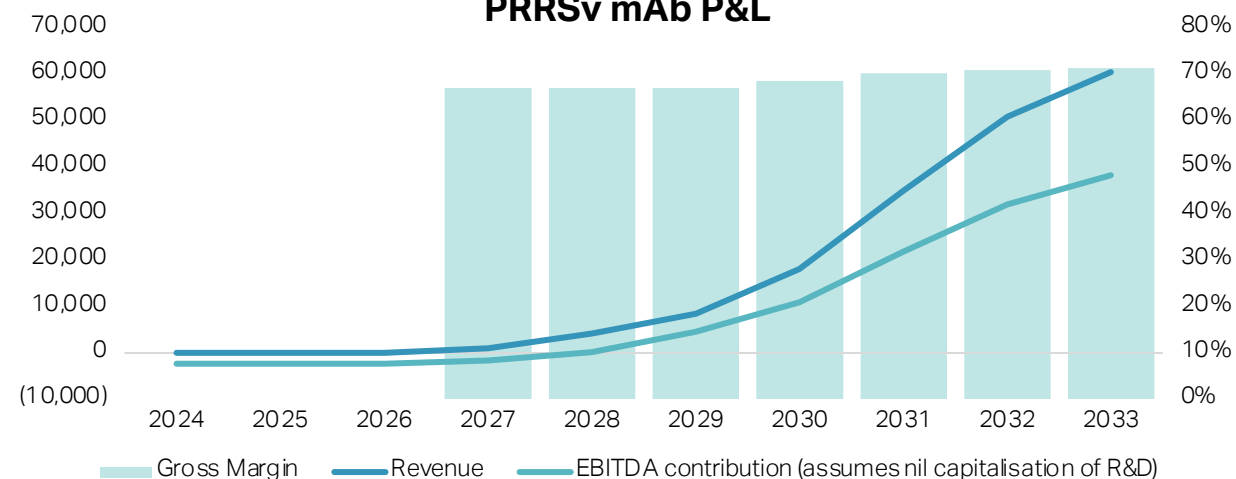


	<b>ECOvaxxin® PCV2/MHP</b>	<b>PRRSv mAb</b>
Addressable market size (£'m)	£363m	£289m
Peak year market share – world ave	12%	21%
R&D cost to go	£6.5m	£11.4m
PTRS	32%	14%
Peak annual revenue	£44m	£61m
Peak annual EBITDA contribution	£18m	£39m
NPV – full lifecycle	£39m	£74m
IRR	52%	53%
Payback period	7 years	7 years

## ECOvaxxin® PCV2/MHP



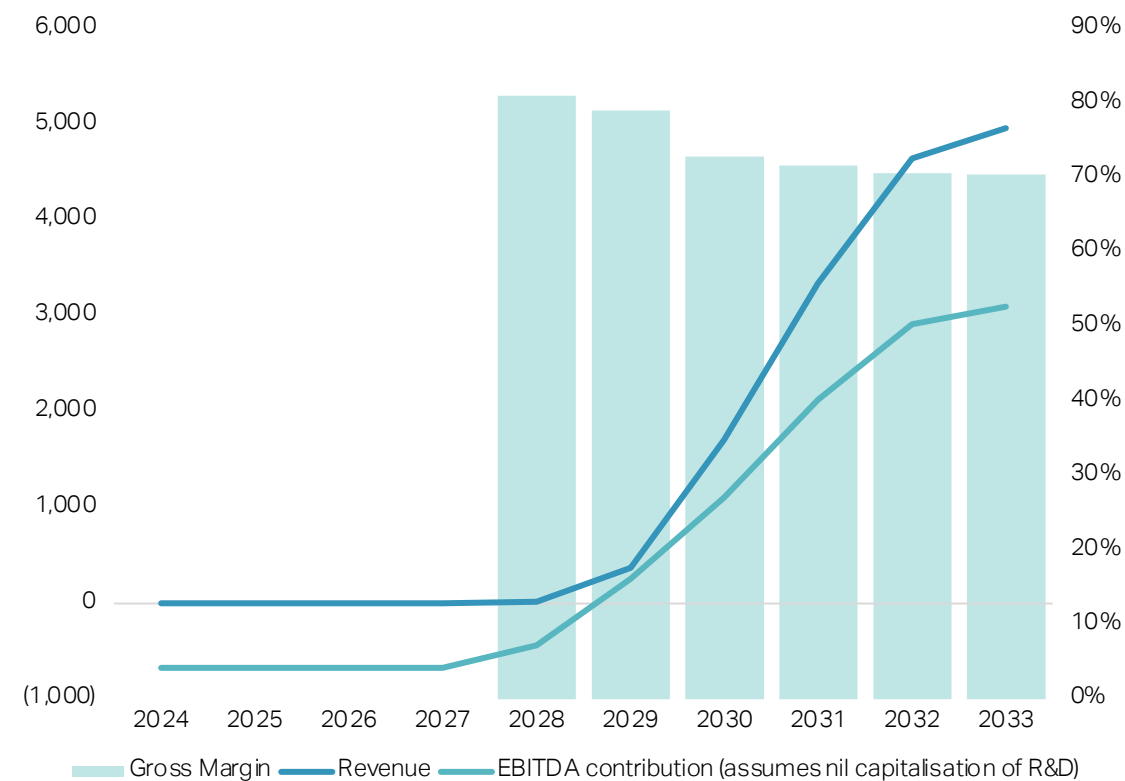
## PRRSv mAb P&L



## Novel Anti-microbial

Addressable market size (£'m)	£69m
Peak year market share – world ave	9%
R&D cost to go	£3.1m
PTRS	45%
Peak annual revenue	£6.2m
Peak annual EBITDA contribution	£3.8m
NPV – full lifecycle	£7m
IRR	36%
Payback period	7 years

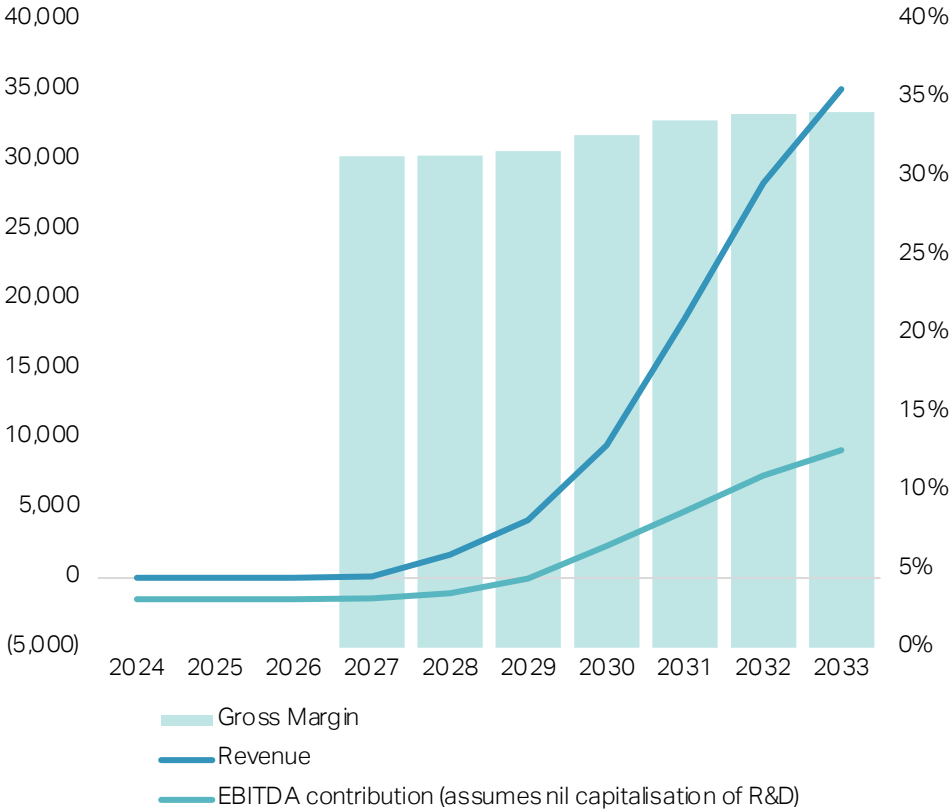
## Novel Anti-microbial P&L



## Necrotic Enteritis Biological

Addressable market size (£'m)	£148m
Peak year market share – world ave	25%
R&D cost to go	£7.9m
PTRS	5%
Peak annual revenue	£37m
Peak annual EBITDA contribution	£10m
NPV – full lifecycle	£17m
IRR	33%
Payback period	8 years

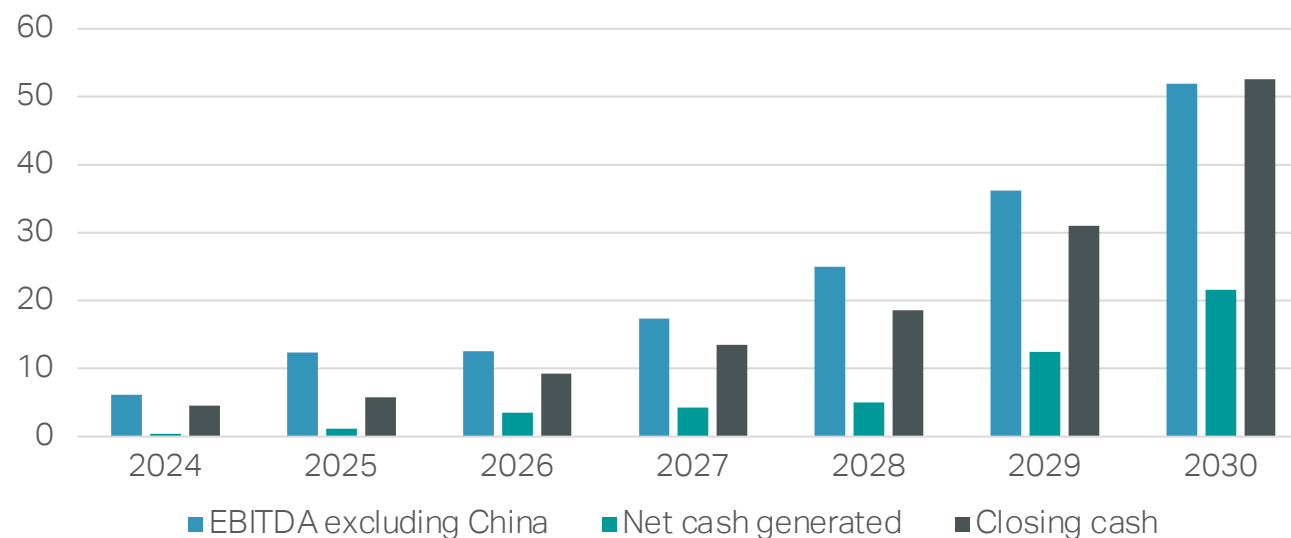
## Necrotic Enteritis Biological P&L





	Peak Revenue (£'m)	Peak EBITDA	NPV Life Cycle (£'m)	Payback Period	Probabilised NPV	IRR
ECOVaxxin® MG	15	8	18	6 Years	14	44%
ECOVaxxin® MS	11	7	17	6 Years	14	46%
Novel Anti Microbial	6	4	7	7 Years	3	36%
ECOVaxxin® PCV2/MHP	44	18	39	7 Years	12	52%
PRRSv mAb	61	39	74	7 Years	10	53%
Necrotic Enteritis mAb	37	10	17	8 Years	1	33%
Others	148	76	158	9-11 Years	32	28-42%
<b>Totals</b>	<b>320</b>	<b>162</b>	<b>330</b>		<b>86</b>	<b>48%</b>

## Ex China Cash after R&D



## EAH share price analysis (simple)

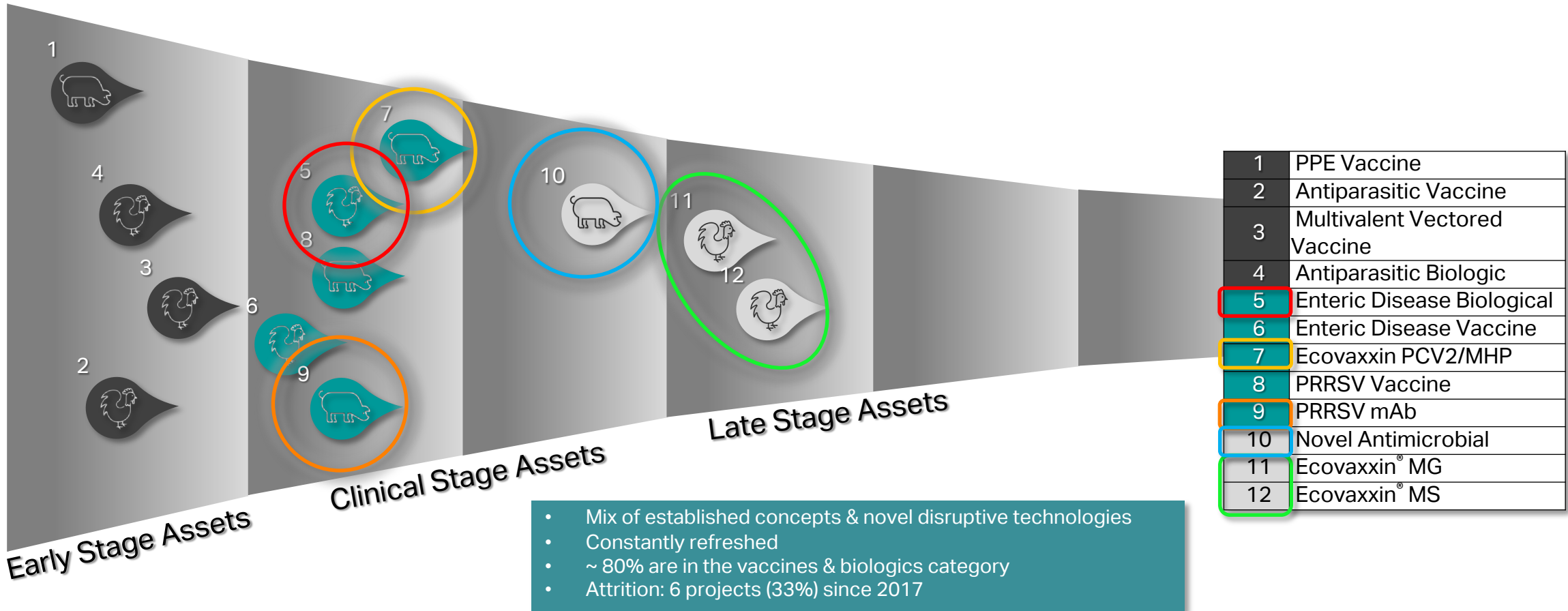
Share price at 1 Nov 23 106p  
 Number of shares in issue 68m  
 Consensus EBITDA Mar 24 8.1m

	Risk adjusted	Gross
NPV in R&D portfolio	86m to	330m

# R&D Pipeline Focus

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on treatment & prevention of Pig & Poultry bacterial, viral and parasitic diseases of economic importance



- Eco is pregnant with innovation
- Assets of significant value
- Portfolio value delivering: >£200M revenue >£90M EBITDA
- Substantial increase in value of the enterprise
- 2-3x in 7-10 years