

WHEN TO USE PROVENT ECL

• Enteric challenges actively observed in neonatal and nursery pigs

- Proactively managing risks of enteric disease (stress, seasonality, mixing pig flows)
- Conventional tools, such as antibiotics, may not be an option in managing enteric health

FEEDING PROVENT ECL

Feed ProVent ECL at a rate of 500 grams per metric ton of complete feed to sows in gestation and lactation and nursery pigs.

PRODUCT AVAILABILITY

ProVent ECL is available in a 20 kg bag or in a water-dispersible form (50 gram packets).

REFERENCES

- 1. United Animal Health® PathKinex[™] pathogen surveillance data. Growth inhibition analysis conducted in-vitro on isolates of *C. perfringens* (40), C. difficile (36) and E. coli (41).
- 2. Federico A. Zuckermann, Robert Husmann, WeiYu Chen, Patrick Roady, Janice Pfeiff, Kyle R. Leistikow, Megan Duersteler, Sona Son, Michael R. King, Nathan R. Augspurger. 2022. Bacillus-Based Direct-Fed Microbial Reduces the Pathogenic Synergy of a Coinfection with Salmonella enterica Serovar Choleraesuis and Porcine Reproductive and Respiratory Syndrome Virus. Infection and Immunity. 07 March https://doi.org/10.1128/iai.00574-21.
- 3. "Diagnostic tools can't beat sanitation", Attila Farkas, DVM, Carthage Veterinary Service. National Hog Farmer, October 26, 2018.
- 4. T. Specht, DVM, Heimerl; B. Heimerl, Heimerl Farms, LTD (2020). ProVent[®] ECL, a unique Bacillus-based direct-fed microbial (DFM), as a tool to improve wean-to-first service interval distribution and sow productivity. AASV Annual Meeting, 119-123.
- 5. United Animal Health® Internal Trial 17-S035. Combined performance from 14 experiments across 12 weaning groups where sow treatment was blocking factor. Approx. 2,500 progeny from sows fed ProVent[®] ECL.
- 6. M. Hensch, DVM, J. Miller, DVM, J. Spencer, Ph.D, and J. Lee, M.S. (2021). Optimizing gut health in the face of endemic enterics. AASV Annual Meeting, 140-145.



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ProVent **ECL**

ProVent ECL is part of a next generation microbial program from United Animal Health. It is a *Bacillus*-based, multi-strain, direct fed microbial to be used when managing enteric challenges in neonatal and nursery pigs.

IT'S NOT JUST ONE PATHOGEN

When it comes to enteric disease, surveillance data shows that 86% of the time there is more than one pathogen present.¹ Many products in the market lack broad coverage of pathogenic E. coli & Clostridium and are only 1-2 strain products. Oftentimes, these strains may not have advanced capabilities for pathogen inhibition and in situations with high pathogen diversity, these products show lack of efficacy.

PROVENT ECL IS UP TO THE CHALLENGE

- ProVent ECL consists of novel Bacillus strains native to healthy, high-performing animals
- The strains in ProVent ECL are screened for superior antimicrobial properties
- A higher-strain formulation provides broad spectrum coverage of common pathogenic E. Coli and Clostridium
- Amongst the United Animal Health microbials, the higher CFU concentration in ProVent ECL provides stronger response in higher challenge, more complex situations





About United Animal Health United Animal Health is a global Ag Biosciences company based in the United States, providing animal nutrition and health products worldwide.



NOT ALL PRODUCTS ARE CREATED EQUAL

- · Many direct fed microbial products fail to deliver consistent results.
- ProVent ECL strains were screened for superior antimicrobial activities.
- Compared to competitor direct fed microbial products, ProVent ECL offers greater growth inhibition in the presence toxigenic *E. coli* & *Clostridium*¹(Fig. 1).
- Greater capabilities allows for stronger results in enteric challenge situations.



Figure 1: In-vitro pathogen growth inhibition analysis comparing ProVent ECL with three competitor direct fed microbials. Growth inhibition indicated in green and lack of inhibition in red.

COMPLEX CHALLENGES REQUIRE COMPREHENSIVE TOOLS

- The presence of multiple pathogens increases the risk of disease susceptibility.
- With strains selected for immune modulation capabilities, ProVent ECL has proven to further reduce the severity of clinical disease caused by bacterial and viral co-infections.²
- Using ProVent ECL with multiple interventions provides synergies for greater results when in managing complex enteric challenges³ (Fig. 2).



Figure 2. Feeding sows ProVent ECL, in combination with Rotavirus vaccine and improved sanitation, resulted in reduced pathogen quantities (red line) and reduced preweaning mortality (PWM% blue) line).

THE SOW IS A KEY SOURCE

- The sow is a key source of pathogen transmission.
- Feeding ProVent ECL to sows reduces the presence and quantities of pathogenic E.coli & Clostridium in both sows and their piglets (Fig. 3).
- Influencing the sow drives improves performance downstream.





Sow Unit E. coli Virulence Gene

Profile After ProVent ECL Use

Figure 3. Before and after results from a United States pork production system where ProVent ECL was fed to sows.

FEEDING PROVENT ECL TO A TOP 40 US PORK POWERHOUSE IMPROVED SOW PRODUCTIVITY⁴

- ✓ 2.7% reduction in preweaning mortality
- 2.1% increase in sows bred between days 3-7
- **0.36 increase** in total pigs born (sows bred days 3-7)
- **3.8% reduction** in delayed WTFSI or sows never in heat (D18 or more postweaning)

FEEDING PROVENT ECL TO SOWS IMPROVES **PROGENY HEALTH & PERFORMANCE**

- Reduces progeny nursery medication treatments⁵ (Fig. 5)
- Improves progeny postweaning performance⁵ (Table 1)

Table 1. Summary of 14 Nursery Trials With Progeny from Sows Fed ProVent ECL

		AVERAGE DAILY GAIN	AVERAGE DAILY FEED INTAKE	AVERAGE FEED/GAIN
Week-1 Post-Weaning	Mean Response (%)	13.0	8.0	(4)
	90% Conf. Int.	4.1 - 22.6	1.6 - 14.3	(7.7) - (0.9)
Week-6 Post-Weaning	Mean Response (%)	3.0	3.0	(1)
	90% Conf. Int.	1.2 - 5.4	0.2 - 4.9	(1.3) - 0.2

PROVENT ECL IMPROVES OUTCOMES IN NURSERY PIGS⁶ (FIG. 6)

When used in the nursery phase, ProVent ECL:

- Reduces removals and antibiotic treatments needed
- Reduced nursery mortality
- Reduces incidence of bacterial related diarrhea

All statements are based on either independent trials conducted by United Animal Health, or adapted from published or peer-reviewed papers.





Quality Responses (% of Pigs) **Internal Progeny Nursery Evaluation**



Quality Responses (% of Pigs) **Nursery Field Evaluation**



Control: (n=7997) No ProVent ECL + Treated: (n=7498) Provent ECL + starting at 1 DPW through 36 DPW