In a survey of food disease outbreaks over nearly a decade, poultry accounted for a higher percentage of *Salmonella* outbreaks than any other food commodity, with approximately 40% of tracked outbreaks linked to live poultry, shell eggs or processed poultry products.\(^1\)

**Your birds are constantly at risk.**

- Vertical transmission of bacterial pathogens like *Salmonella* remains a critical issue throughout all stages of production, with reinfection promoting a cycle of disease on operations just like yours.

- Suboptimal incubation and brooding of infected eggs and chicks can contribute to bacterial outbreaks, resulting in high mortality and morbidity in broilers—and eating away at your profits.

**WHAT IF YOU COULD CONTROL *SALMONELLA* AND INCREASE PERFORMANCE IN YOUR FLOCK?**

**PROMOTE HEALTH.**
What if you could reduce the presence of pathogens in your birds for cleaner eggs?

**REDUCE OUTBREAKS.**
What if you could reduce the likelihood of bacterial outbreaks in your facilities caused by pathogens like *Salmonella*?

**INCREASE PROFITS.**
What if you could boost your profits thanks to consistently improved performance in both normal and challenged conditions?

**WHY ARM & HAMMER™? THE PROOF IS IN THE RESEARCH.**

*In vitro* studies (Fig. 1) show that CELMANAX\(^\text{™}\) can agglutinate\(^2\) and prevent adherence\(^3\) of several species of *Salmonella*, preventing bacteria from colonizing in the GIT.

**FIGURE 1. EFFECT OF CELMANAX ON INHIBITION OF *SALMONELLA* ADHERENCE TO GUT EPITHELIUM IN VITRO\(^2\)**

![Graph showing adherence inhibition in vitro.](image)
CELMANAX REDUCED SALMONELLA INFECTION.

A research trial4 (Fig. 2) using a *Salmonella* challenge in 250 Hyline W-36 pullets showed that hens fed CELMANAX™ had up to 1.5 logs lower *Salmonella enteritidis* counts in the ceca compared to the control.

In the same trial, prevalence of cecal *Salmonella* above one million cfu/g was reduced from 47.9% to 25.5% when CELMANAX was fed from day one of age \( p=0.06 \).

REDUCED MORTALITY AND IMPROVED LAYER PERFORMANCE.

A study5 (Table 1) of approximately 240,000 Lohman and H&N hens showed that CELMANAX supplementation reduced mortality, improved eggs/hen housed (EHH) and increased case weight—leading to a potential $0.60 additional revenue per hen housed.

In the same trial, CELMANAX reduced prevalence of environmental *Salmonella* at the end of the pullet phase and in mid lay.

To learn more about CELMANAX, contact your veterinarian, nutritionist or ARM & HAMMER™ representative, or visit AHanimalnutrition.com.

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2 Jalukar, et al. 2009 Midwest ASAS meeting Des Moines, T228
3 Baines, et al. 2013 Presented at the Gut Health Symposium in St. Louis, Missouri