

# Research Notes P-95

ARM & HAMMER



## CELMANAX improved performance of laying hens and reduced environmental *Salmonella* prevalence in a commercial operation

### TRIAL DESIGN<sup>1</sup>

- Treatments were fed from day 1 (pullets) until 45 weeks of age.
  - Control (contains *Lactobacillus* product)
  - CELMANAX™, 1 lb./ton
- These treatments were fed to a total of four houses – two control houses and two CELMANAX houses.
- On average there were 60,000 to 90,000 hens in each layer house.
- Breeds represented are Lohmann and H&N and were paired by age.
- Mortality, egg production and environmental *Salmonella* prevalence were monitored.

### RESULTS

Results from two control and two CELMANAX houses were combined and means calculated for each parameter.

**Production:** CELMANAX supplementation reduced percent mortality, and improved eggs/hen housed (EHH), and case weight (Table 1). Economic analysis (Table 3) demonstrated potential \$0.60 additional revenue per hen housed.

**Salmonella:** FDA guidance 2011 requires one environmental swab test between 14-16 weeks during pullet phase and another test between 40-45 weeks of age in lay houses. CELMANAX reduced prevalence of environmental *Salmonella* at the end of pullet phase (16 weeks) and in mid lay (45 weeks) (Table 2).

**Conclusions:** CELMANAX supplementation in pullet and layer diets can lead to reduction in *Salmonella* prevalence in layer houses while improving egg performance and profitability.

TABLE 1. PRODUCTION SUMMARY FOR FLOCKS AT 45 WEEKS OF AGE

	% MORTALITY	EGG/HEN HOUSED	CASE WEIGHT, LBS.
<b>Control</b>	2.86	159.36	47.35
<b>CELMANAX</b>	1.82	168.85	48.95

TABLE 2. SALMONELLA PREVALENCE, %

Treatment	Pullet 16 weeks	Lay 45 weeks
<b>Control</b>	19.9	33.75
<b>CELMANAX</b>	15.7	20.0

TABLE 3. ECONOMIC ANALYSIS SHOWING BENEFIT OF CELMANAX SUPPLEMENTATION PER HEN HOUSED.

ROI AT 45 WEEKS	CONTROL	CELMANAX
<b>EHH</b>	159.36	168.85
<b>Cumulative Feed Intake (FI)/hen housed, ton</b>	0.02	0.02
<b>Feed cost#/hen, \$</b>	4.20	4.47
<b>Revenue##/hen, \$</b>	14.61	15.48
<b>Profit/hen, \$ (revenue-feed cost)</b>	10.41	11.01
<b>CELMANAX benefit per hen compared to control, \$</b>		0.60

#average feed cost 31.63 cents/doz eggs  
##average price per dozen eggs \$1.10 per dozen

1 Nezworski J, Karunakaran D, Jalukar S. The effects of refined functional carbohydrates (RFCs) supplied to laying hens on egg production and mortality under commercial conditions. Presented at 2019 International Poultry Scientific Forum; B311.

