Accredited Broiler Research Data

AZOMITE® Supplementation Comparisons at 21 and 45 days

AZOMITE (0%) Body wt 21 days = 817.506 + 0.49614(Kcal/lb increase)  
                    $P = 0.1184$  
                    $R^2 = 0.7773$  

AZOMITE (0.5%) Body wt 21 days = 825.511 + 0.53664(Kcal/lb increase)  
                    $P = 0.0251$  
                    $R^2 = 0.9503$  

AZOMITE (0%) Average 829.91 b g  
                    $P = 0.0211$  
                    $n = 4$ treatments  

AZOMITE (0.5%) Average 838.93 a g  
                    (difference 9.02 g)
AZOMITE (0%)  Mort-Adj FCR 0-21 days = 1.43600 – 0.00160(Kcal/lb increase)  $P = 0.0019$  $R^2 = 0.9963$
AZOMITE (0.5%)  Mort-Adj FCR 0-21 days = 1.40719 – 0.00160(Kcal/lb increase)  $P = 0.0123$  $R^2 = 0.9755$

AZOMITE (0%)  Average 1.3960 $^a$  $P = 0.0010$  $n = 4$ treatments
AZOMITE (0.5%)  Average 1.3673 $^b$  (difference 0.0287)

Solving equations for 0, 10, 30, and 60 Kcal/lb increases:
AZOMITE (0%)  + 0 = 1.4360  ------  AZOMITE (0.5%)  + 0 = 1.4072
AZOMITE (0%)  +10 = 1.4200 (-0.016)  AZOMITE (0.5%)  +10 = 1.3912
AZOMITE (0%)  +30 = 1.3880 (-0.048)  AZOMITE (0.5%)  +30 = 1.3592
AZOMITE (0%)  +60 = 1.3400 (-0.096)  AZOMITE (0.5%)  +60 = 1.3112
Average  +25 = 1.3960  Average  +25 = 1.3672  (difference -0.0288)

Conclusion:

On average, for each 10 kcal ME/lb increase in the unsupplemented (0% AZOMITE) diets there was 0.016 reduction in mortality adjusted 0-21 day FCR. There was a difference of 0.0287 between treatments (0 vs 0.5% AZOMITE), favoring supplemental AZOMITE, based on an average increase of 25 kcal ME/lb in diets for each series of treatments. If 0.0287/0.016 is 1.79375, then 10 kcal/lb x 1.79375 amounts to 17.94 kcal ME/lb increase for supplemented treatment groups compared to the unsupplemented ones. Therefore, each 1 lb of AZOMITE (of the 10 lb/ton total) contributed 1.794 kcal ME/lb of diet in this trial. This is equivalent to AZOMITE containing (or having the capacity to generate) 3,588 kcal ME/lb which is approximately the same as animal fat (that is, 1.794 x 2,000 lb = 3,588).
Figure 3. Body Weight (g) at 42 Days by AZOMITE Level (0 vs 0.5%)

AZOMITE (0%)  Body wt 42 days = 2508.76 + 1.42874(Kcal/lb increase)  \( P = 0.0970 \)  \( R^2 = 0.8155 \)
AZOMITE (0.5%) Body wt 42 days = 2537.11 + 1.63686(Kcal/lb increase)  \( P = 0.0045 \)  \( R^2 = 0.9911 \)

AZOMITE (0%)  Average 2544.5 g  \( P = 0.0559 \)  \( n = 4 \) treatments  
AZOMITE (0.5%) Average 2578.0 g  (difference 33.5 g)
AZOMITE (0%) Mort-Adj FCR 0-42 days = 1.85226 - 0.0008405(Kcal/lb increase) \( P = 0.0421 \) \( R^2 = 0.9175 \)

AZOMITE (0.5%) Mort-Adj FCR 0-42 days = 1.83090 - 0.0007262(Kcal/lb increase) \( P = 0.0794 \) \( R^2 = 0.8475 \)

AZOMITE (0%) Average 1.8312 \( \pm \) 0.0021 \( n = 4 \) treatments

AZOMITE (0.5%) Average 1.8127 \( \pm \) 0.0025 (difference -0.0186)

Solving equations for 0, 10, 30, and 60 Kcal/lb increases:

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\begin{align*}
\text{AZOMITE (0%)} & \quad + 0 = 1.8523 \\
\text{AZOMITE (0%)} & \quad +10 = 1.8439 (-0.0084) \\
\text{AZOMITE (0%)} & \quad +30 = 1.8270 (-0.0253) \\
\text{AZOMITE (0%)} & \quad +60 = 1.8018 (-0.0505)
\end{align*}
\]

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\begin{align*}
\text{Average} & \quad +25 = 1.8313 \\
\text{Average} & \quad +25 = 1.8127 \quad (\text{difference -0.0186})
\end{align*}
\]

Conclusion:

On average, for each 10 kcal ME/lb increase in the unsupplemented (0% AZOMITE) diets there was 0.0084 reduction in mortality adjusted 0-42 day FCR. There was a difference of 0.0185 between treatments (0 vs 0.5% AZOMITE), favoring supplemental AZOMITE, based on an average increase of 25 kcal ME/lb in diets for each series of treatments. If 0.0185/0.0084 is 2.20238, then 10 kcal/lb x 2.20238 amounts to 22.02 kcal ME/lb increase for supplemented treatment groups compared to the unsupplemented ones. Therefore, each 1 lb of AZOMITE (of the 10 lb/ton total) contributed 2.20238 kcal ME/lb of diet in this trial. This is equivalent to AZOMITE containing (or having the capacity to generate) 4,405 kcal ME/lb which is greater than that of soybean oil (that is, 2.20238 x 2,000 lb = 4,405). With 3,588 kcal ME/lb AZOMITE in starter (19.71% of feed, 0-21 days) and 4,405 kcal ME/lb AZOMITE during the entire growout (0-42 days), the AZOMITE is estimated to have 4,606 kcal ME/lb during the grower-finisher period (80.29% of feed, 21-42 days). Calculations are 3,588 x 0.1971 = 707 and 4,606 x 0.8029 = 3,698, so 707 plus 3,698 weighted values equal 4,405 total.