

Technical Bulletin

Information from Phibro Technical Services

Trial Evaluates Impact of Direct-Fed Microbial on Production Parameters in Broilers Faced with Disease Challenge

MicroLife Pace™ direct-fed microbial offers a combination of two microbial strains of *Bacillus subtilis* and *Bacillus licheniformis* shown to be beneficial for intestinal health in poultry. Both *Bacillus* strains have excellent gut viability with a high survivability rate against gastric acid and bile salts. These probiotic strains are heat stable, have no refrigeration requirement.

In this trial, broilers were infected with *Clostridium perfringens*, *E. coli* and multiple coccidia species at a day of age. Compared to the challenged controls, broilers fed MicroLife Pace and having a similar pathogen challenge to the controls, showed statistically significant improvements in:

- Mortality
- Feed Conversion
- European Production Efficiency Factor

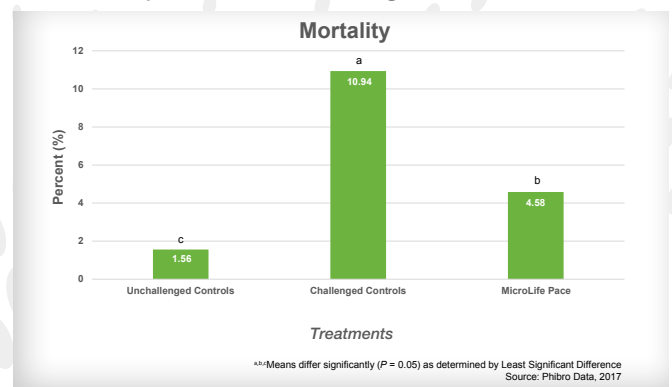
Trial Design

Mixed-sex commercial broilers were raised in pens of 52 birds each, with 10 replicates of the treatment group, and eight replicates each of an unchallenged control and a challenged control. MicroLife Pace was fed at a level of 300,000 colony forming units per gram (CFU/g) of finished feed. A natural disease challenge was created by adding built-up litter from a disease challenged farm, at day one, to the challenged control and the MicroLife Pace treatment group. Isolated organisms identified in the disease challenged litter source included *Clostridium perfringens* (causative agent of necrotic enteritis), *E. coli* and multiple coccidia species. The trial was terminated at 42 days of age.

Results

With almost 11% mortality in the challenged control group, an extremely high disease challenge was accomplished. The birds fed MicroLife Pace had less than half the mortality as the challenged control group which was a statistically significant difference (Figure 1).

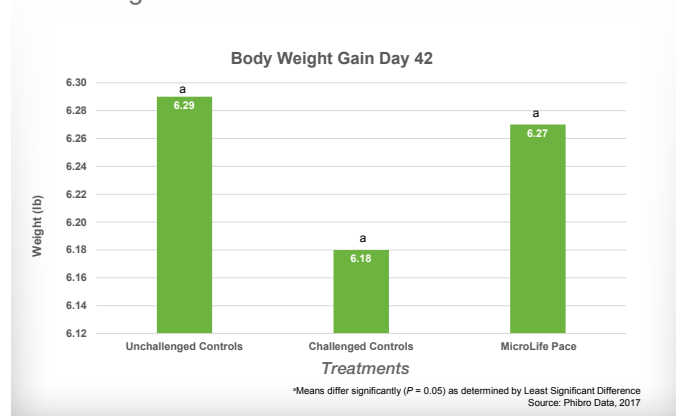
Figure 1. Birds Fed MicroLife Pace had Lower Mortality Rates Compared to the Challenge Control



Birds fed MicroLife Pace and subjected to challenge organisms had nearly the same body weight gain as the unchallenged controls. All groups had statistically similar body weight gain (Figure 2).

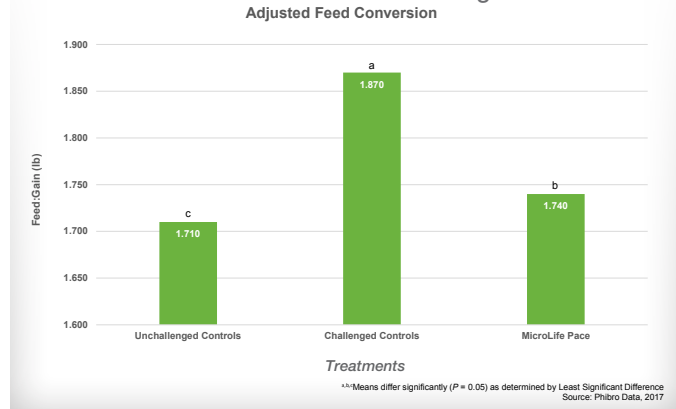
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Figure 2. Disease Challenged Birds Fed MicroLife Pace had Similar Body Weight Gains Compared to Unchallenged Birds



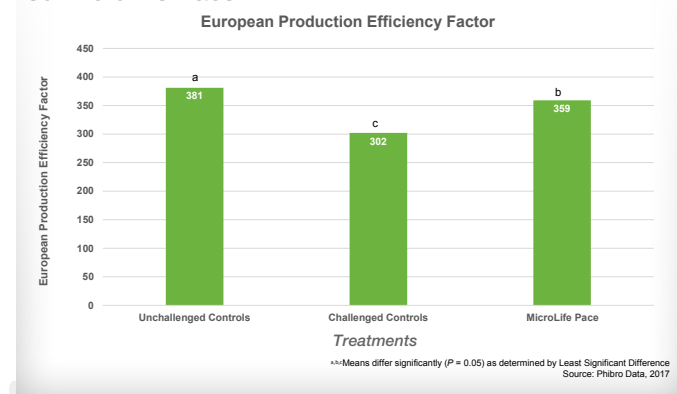
There was a 13-point improvement in feed conversion in the MicroLife Pace fed group compared to the challenged control group which was statistically significant (Figure 3).

Figure 3. Birds Fed MicroLife Pace Showed Improved Feed Conversion Over Disease Challenged Birds



The European Production Efficiency Factor (EPEF) uses a standardized formula that considers age in days, weight gain, mortality and feed conversion to compare flock performances. The MicroLife Pace group showed an impressive result of 359 which was a statistically significant difference compared to the challenge control group, despite the severe disease pressure in this trial (Figure 4).

Figure 4. EPEF was Positively Impacted for the Birds Fed MicroLife Pace



Conclusion

In a natural disease challenge model, broilers were infected with *Clostridium perfringens*, *E. coli* and multiple coccidia species at a day of age. Statistical analysis showed that birds fed MicroLife Pace at a level of 300,000 CFU/g had statistically significant improvements in mortality, feed conversion and the European Production Efficiency Factor compared to the challenged control group.

To learn more about MicroLife Pace, talk with a Phibro expert at +1.800.677.4623.

This information has been prepared for industry professionals.