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Distribution of Bacteria at Different Poultry Litter Depths

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Abstarc :

A common practice in the commercial broiler industry is to reuse litter over multiple broiler flocks. Over time the bacterial populations in the reused litter increases but how those organisms are spatially distributed throughout the litter bed is unclear. Therefore, the goal of this project was to investigate the distribution of bacteria at three different depths of litter. Litter samples were collected from three commercial broiler houses on three different farms. Four samples from each house were collected using clear PVC pipes which were driven through the litter bed to the clay floor. Each pipe was transported up-right to the lab, where they were cut into three sections (top, middle and bottom) exposing the litter for processing. Litter from each section was serially diluted in peptone and streaked onto either tryptic soy agar or Levin eosin methylene blue agar plates. Plates were incubated under the appropriate atmospheric condition for 24 h at
37oC. After 24 h, plates were counted for total aerobes, anaerobes and coliforms. Results of this study indicate a significant difference ($p<0.05$) in bacterial counts between the different sections of the litter. The middle and bottom sections had significantly lower anaerobe and coliform counts compared to the bacterial counts in the top sections. In conclusion, the results suggest that the middle and bottom section of litter provide a less favorable environment for bacterial growth than the top section.

Key Word :
Poultry, bacteria, litter depth, disease

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