

## **ANALYSIS OF BEDDING AND RAFTER DUST FROM NORTH CAROLINA CHICKEN COOPS**



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Respiratory problems documented among poultry farmers include airway irritation, cough, chest tightness and phlegm. In the present study, bedding and rafter dust from 16 different chicken coops were examined. The bedding ranged in age from 2 weeks to 3 years old. Each bedding and dust was examined for bacteria (total, gram negative and thermophilic), fungi, endotoxin, histamine and ammonia. The presence of chicken sera, sera albumin, IgG and egg albumin were also documented. The rafter dust was aerosolized, the respirable fraction collected and evaluated for endotoxin, histamine, and ammonia. Only ammonia correlated with the age of the bedding (up to 1.5 years old  $r=0.9488$ ). The 2-week-old bedding contained an unusually high amount of endotoxin (13570 EU/mg). In the other beddings, rafter and respirable dusts endotoxin levels ranged from 15.2 to 814 EU/mg, 50.9 to 865.2 EU/mg, and 0.1 to 512.8 EU/mg, respectively. Histamine was found in all samples tested ranging from 0.33 to 6.6 ng/mg bedding or dust. Chicken coop bedding and dust contains a variety of substances and organisms that may present a potential respiratory risk to farmers.

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