Abstract

This study aimed at evaluating the live performance of turkeys during the initial stage of production (1-26 days of age) and to map the environmental variables inside turkey houses, such as temperature, relative humidity, CO2 concentration, at two distinct minimum ventilation systems. House 1 (H1) was equipped with a negative-pressure ventilation system and House 2 (H2) was equipped with a positive-pressure ventilation system. This study was performed in commercial poultry houses, located in Francisco Beltrão, Paraná, Brazil, in June, 2008. A number of 14,000 turkeys toms at the same age, provided by the same local hatchery and were housed at a stocking density of 23 birds m-2. Three 13 m2 boxes with 300 turkeys each were placed inside the poultry houses. All treatments were assigned for the birds inside each of the three boxes. The poultry barns were virtually divided in eight equally distributed in areas where the environmental variables were recorded. The performance parameters measured were weight gain, feed conversion and mortality rate, recorded weekly. Analysis of variance and F-tests were performed to compare results within different environmental conditions, using MINITAB 14 statistical software. The ventilation systems did not significantly influence CO2 concentrations (p = 0.489), whereas temperature (p = 0.016) and relative humidity (p = 0.0001) and feed conversion (p = 0.001) were significantly affected by ventilation system. Temperature and relative humidity in H2 (positive pressure ventilation system) was found to be less aversive than those in H1 (negative pressure system). Also, bids in H2 presented lower feed conversions than those in H1.

Keywords

Air renewal, gases, poultry house, thermal comfort.