Comparason of environmental variables in two different systems in litter (new and reused) in broiler housing

M.S. BARACHO and I.A. NÄÄS

School of Agriculture Engineering- UNICAMP-FEAGRI-P.O.Box 6011- Campinas-SP-Brazil.

E-mail: martbaracho@yahoo.com.br

An increase in production technology was the major factor that lead Brazil to be the third largest world poultry producer (ABEF, 2007). Broiler production in general, is more effective when reared on litter of good quality. The absence of this condition may lead to discomfort affecting bird's performance, and resulting in significant economic loss. The litter in broiler houses can be considered as a substrate for the development of fungi such as Aspergillus genus which can interfere in production (Quilles & Hevia, 2003) and produce mycoses or mycotoxicoses and may cause increased mortality. (Ritz *et al.*, 2005). The concept of safety and welfare refers to the maintenance of an environment free of microorganisms that can interfere in production (Quilles & Hevia, 2003; Chevillon, 2000.) affecting the heath, welfare and thermal condition of the animals. The objective of this study was to compare two different systems for litter management in broiler housing (new and reused) and evaluate whether the difference in litter changes the environment where the poultry is reared. Data on environmental relative humidity, dry bulb temperature, wind speed, humidity of litter, and colony forming units of fungi (CFU) were collected. Environmental variables were recorded in centre geometric using the data loggers and wind speed was recorded using a thermo-anemometer. The method recommended by Brasil (1992) was used to analyze the humidity of the litter and for analysis of fungi the litter of each sector was collected and stored in Petri dishes. In the laboratory 5g was diluted in 100ml of Tween 80 for 1 hour. From this sample, 1ml was diluted with 9ml of saline and plated in dishes Petri and incubated at 27o C for three days. Afterwards CFU were counted and identified according to fungi genus morphology. (Fennell & Raper, 1965). For statistical analysis Minitab14® statistical software was used. The results showed that the environment with re-used litter presented distinct values of ammonia concentration, high humidity in litter, as well as higher fungi incidence. The results forecasted distinct environmental effects that may influence poultry welfare.

Keywords: litter, environmental variables, fungi