Worthwhile Operational Guidelines & Suggestions

BROILER PROCESSING TIMELY INFORMATION – MAY 2014

Wetting broilers to reduce heat stress during pre-slaughter handling

Broiler chickens must be caught and transported to the processing plant 24/7 and around the clock, regardless of ambient conditions. Given their feather cover and lack of sweat glands on the skin, birds primarily rely on respiration (panting) to dissipate latent heat from their body. Evaporation of water from the respiratory tract requires (and removes) energy, which in turn helps reduce core body temperature. Two important principles apply here:

1. The moisture carrying capacity of surrounding air depends on the relative humidity (RH). Higher the RH of the air, the lower the moisture removal capacity.
2. For every 20°F (10°C) increase is air temperature, the moisture-holding ability of air will double (RH is reduced by 50%).

Wetting broilers in after catching and during holding in the plant has become an effective hot weather management tool, especially in areas where the ambient RH is low. So, should we be concerned if the RH is high or if added moisture adds to the RH? Can we actually hinder the bird’s ability cool itself via panting? The answer is: NO, as long as there is sufficient air speed is created in and around the crated birds (i.e., properly sized and positioned fans with ample airspeed when the birds are held stationary or if the trucks are moving!). High velocity air facilitates heat removal from the body and there will be less reliance on panting to cool. Of course the container design, placement on the truck and bird density in crates are also important factors in bird’s ability of dissipate heat…

Contact: S. F. Bilgili, PhD
Phone: (334) 844-2612
E-mail: bilgisf@auburn.edu
Poultry Science Department
Auburn University, Auburn, AL 36849-5416
www.ag.auburn.edu/dept/ph/