

Higher inclusion rate of canola meal under high ambient temperature for broiler chickens

ABSTRACT

Extruded canola meal (ECM) was included in diet of broiler chickens at 0, 10, 20, and 30% (wt/wt) from 1 to 35 days of age. A total of 240 day-old male chicks were assigned in groups of 5 to 48 battery cages in environmentally controlled chambers and diets were replicated with 12 cages/treatment. From d 29 to 35, birds from each dietary group were exposed to either thermoneutral ($23 \pm 1^\circ\text{C}$; unheated) or high ($36 \pm 1^\circ\text{C}$; heated) temperature conditions. High ambient temperature, irrespective of ECM inclusion, depressed the growth performance of birds. Inclusion of ECM increased feed conversion ratio (FCR) linearly in unheated birds during d 1 to 28 ($P < 0.001$) and d 29 to 35 ($P = 0.001$). However, no adverse effects of ECM inclusion were observed on the growth performance of heated birds. The absence of these detrimental effects could be associated with the lack of triiodothyronine (T_3) elevation by ECM inclusion in heated birds. In conclusion, ECM can be fed, at least, up to 30%, without any adverse effect on growth performance of broiler chickens raised under chronic high ambient temperature.

Keyword: Broiler; Extruded canola meal; Heat stress; Triiodothyronine