

## A COMPARATIVE EFFECT OF MASH AND PELLET FEED WITH DIFFERENT PELLETING TEMPERATURE ON BLOOD METABOLITES, CARCASS CHARACTERISTICS AND BROILER PERFORMANCE

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### INTRODUCTION

The benefits of feeding pellets have been widely cited throughout past and current literature, leading to the continued utilization of such diets over mash. Pellets have been shown to improve feed conversion by reduced ingredient segregation, increased palatability and decreased energy used during feed consumption (Briggs *et al.*, 1999). Temperature is the one important factor that effect on pellet quality. Bedford *et al* (2002) claimed broiler weight gain and feed: gain was deteriorated significantly with increasing temperature. The present study was conducted to determine the effects of mash and pelleting (at different temperatures) on blood metabolites, carcass traits and broiler performance.

### MATERIALS AND METHODS

One hundred and ninety two day-old mixed sexed broiler chicks (Cobb 500) were used in a completely randomize design with 4 treatments and 4 replicates. Experimental treatments included: Mash form and three experimental diets pelleted with temperature of 72, 82 and 92°C, respectively. Blood metabolites and carcass characteristics were measured in 49 day of age. Chicken body weight and feed intake were recorded each week to calculate weight gain and feed conversion.

### RESULTS AND DISCUSSION

Results indicated that effects of thermal process in 72°C had a significant increase feed intake in comparison to 82°C in 1-49 day of age ( $P < 0.05$ ). Body weight gain and feed conversion ratio (FCR) of broiler were significantly improved in broilers were fed with pellet (in all temperature process) in comparison to mash form in starter period ( $P < 0.05$ ). In total period, the process of 82 °C significantly improved FCR in broiler chickens, too. One of the main reasons of the improvement of broiler body weight gain in pellet group is that the enzyme system of broiler in early stage of rearing is incomplete and pellet feeding may help to break-down *disulfide-bonds* and increase digestion process. Experimental treatments had no significant effect on breast, thigh, carcass, liver, gizzard, heart and intestine percent weight ( $P > 0.05$ ). These findings agree (except in gizzard weight) with the results of a study conducted by Ahmed *et al* (2013). Effect of the feed form and different pellet process had no significant effect on serum glucose, cholesterol, HDL, LDL and enzyme concentrations of aspartate aminotransferase (AST) and alanine aminotransferase (ALT) at 49 days ( $P > 0.05$ ). The process of 82 °C in pelleting diet improved feed conversion; therefore, it seems that, this temperature could be suggested as appropriate temperature in pelleting process of broiler's diets.

**Keywords:** Thermal process, Pellet, Performance, Broiler

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