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Effects of a qualitative feed restriction strategy on the growth performance and feed cost of mature broiler chicken

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Early growth retardation in broiler chicks induces an accelerated growth known as compensatory growth, which results in final body weights equal or even exceeding that of the birds fed *ad libitum*. The objective of this study was to determine whether relatively mature broiler chicken possess the compensatory growth capacity after a qualitative feed restriction period (RF) and, to determine the effects of such a feeding strategy on growth performance and feed cost of mature broiler chicken. Thirty four days old broiler chicken (n=80) were allocated into twenty cages and the cages were randomly allocated into four dietary regimens. The dietary regimens were; 1) feeding of commercial broiler finisher diet (CF) from day 35 to 49, 2) feeding of above CF and a mixture of soy bean meal/maize meal 1:1 (SM11) in alternate days from 35-40 followed by *ad libitum* feeding of same CF until day 49, 3) same as regimen 2 except the use of soy bean meal/maize meal 1:2 mixture (SM12) between 35-40 d and 4) same as dietary regimen 2 except for the use of soy bean meal/maize meal 2:1 mixture (SM21) from 35-40 d. The total CF intake of the birds subjected to RF was significantly ($p < 0.05$) lower than those who received CF uninterruptedly. The live weight on day 40 and the weight gain from 35-40 d were significantly ($p < 0.01$) reduced when SM mixtures were given from 35-40 d. Interestingly, the weight gain from 41-49 was significantly higher for the birds who received SM11 during 35-40 d than those who received CF uninterruptedly. The total live weight gain and the feed conversion ration (FCR) of the birds subjected RF were not significantly different from the birds in feeding regimen 1. The total feed cost per kg of live weight gain of the birds who received CF throughout reduced by 19 Rs when the second dietary regimen was adopted. It was concluded that mature broiler chicken also show compensatory growth capacity following a qualitative feed restriction and that capacity could be used to reduce the feed cost without performance being negatively affected.

Keywords: restricted feeding, broiler, growth