

Growth response, nutrient and mineral retention, bone mineralisation and walking ability of broiler chickens fed with dietary inclusion of various unconventional mineral sources

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Abstract

Growth response, nutrient and mineral retention, bone mineral content and walking ability of broiler chicken fed dietary inclusion of various unconventional calcium sources were studied using 160-day-old broilers. Four isonitrogenous, isocaloric diets balanced for Ca and P were formulated such that oyster shell, snail shell, wood ash and limestone were used as main non-phytate (Ca from other sources apart from plant) calcium sources. Each dietary treatment consisted of 40 birds replicated four times with 10 birds per replicate. A single diet was fed to the broilers throughout the duration of the study which lasted for 8 weeks. Broilers fed diet containing oyster shell as calcium sources recorded the highest ($p < 0.05$) feed intake of 5863.30 g, while those fed diet containing limestone consumed the least intake ($p < 0.05$) of 5432.56 g. Occurrence of lameness and evidences of gaits were highest ($p < 0.05$) for broilers fed diet containing wood ash. Lowest ($p < 0.05$) Ca and ash retention were recorded for broiler fed diet containing wood ash as Ca sources. Similar tibia ash values were recorded for broilers fed oyster shell, snail shell and limestone. Wood ash inclusion resulted in a low Ca availability hence its inclusion in feeds for broilers should be discouraged.