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Effect of shell grit on physical and nutritional properties of chicken egg

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Modern layer flocks are fed a measured amount of nutritionally balanced feed. To meet the increased calcium (Ca) requirement for egg formation, an additional Ca source is also provided. The objective of this study was to determine the effects of the provision of shell grit (SG) on feed, water and SG intake pattern and some physical and nutritional qualities of eggs. Thirty six weeks old brown egg laying chicken (n=16) were allocated into 16 cages. Birds in eight randomly selected cages received feed and SG *ad libitum* in two separate feeders while those in the other eight cages received feed only. Water, feed and SG intakes were recorded seven times per day (6-8 am, 8-10 am, 10-12 noon, 12-2 pm, 2-4 pm, 4-6 pm and 6 pm-6 am) for a period of month. At the end of the experiment one egg was selected from each cage and used to determine the egg quality parameters. When given *ad libitum,* a layer consumed 220-240 g of feed and 14 g of SG/day. Provision of SG had no effect on feed or water intake. SG intake between 4-6 pm was significantly higher than all other time intervals. When SG was given, the feed and water intakes were also significantly higher during 4-6 pm compared to all other time intervals. In the absence of SG, their feed intake was similar between various time intervals. SG had no effects on egg weight, volume, specific gravity and albumen weight and yolk weight but significantly increased the shell weight, shell ash and albumen crude protein content. Meanwhile, provision of SG significantly reduced the yolk CP content. It is concluded that when given *ad libitum* layers consume excess amounts of feed and SG than they needed to meet the Ca requirement. SG provision had some effects on nutritional properties and keeping qualities of the eggs.

Keywords: shell grit, layer, egg quality