Effect of selenium level and source on egg quality

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Inclusion of organic sources of selenium in the diet of the layer hen is more effective in enriching eggs with Se than inorganic sources (Surai 2000), and broiler meat enriched with Se has been found to have better quality when this has been achieved with an organic rather than an inorganic source of Se in the diet (Naylor and Choct 2000). An experiment was conducted to observe difference in egg quality over a six–week period from adding various amounts of organic (selenium yeast) and inorganic (sodium selenite) Se to the diets of ISA Brown layers from 20 weeks of age. The experimental treatments were: Diet 1, control without added selenium; Diet 2, 0.1 ppm inorganic Se; Diet 3, 0.3 ppm inorganic Se; Diet 4, 0.1 ppm organic Se; Diet 5, 0.3 ppm organic Se; Diet 6, 0.7 ppm organic Se; Diet 7, 1 ppm organic Se. Eggs from 12 birds per treatment, when they were 50 weeks of age, were collected and kept in a cold room (CR) at 4°C or at room temperature (RT) at 18–25°C for 0, 2, 4 and 6 weeks. The Haugh Unit (HU) was measured as an indicator of the internal egg quality (Figure 1).

Haugh Unit of eggs decreased significantly (P<0.01) over time regardless of storage temperature, but the magnitude of the decrease was much larger (P<0.01) in eggs kept at room temperature than at 4°C. No significant effect of either source or level of dietary Se on internal egg quality was found.


Figure 1 Effects of storage and dietary selenium on the quality of eggs kept in a cold room (CR, 4°C) or at room temperature (RT, 18–25°C).