Effect of selenium and vitamin E dietary supplementation of laying hens on selenium and vitamin E accumulation in eggs

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The aim of the present study was to evaluate the effect of increased Se supplementation in the form of Sel-Plex and its combination with vitamin E on Se and alpha-tocopherol concentrations in eggs. Seven groups of laying hens (50 birds in each group) were fed diets containing different levels of Se and vitamin E for 6 months. The control group were fed a diet supplemented with 0.2 ppm selenium in the form of sodium selenite and with 10 ppm vitamin E. Experimental diets were supplemented with Se in the form of Sel-Plex at 0.2, 0.3 or 0.4 ppm and vitamin E supplementations were 10, 20, 40 or 100 ppm. The highest egg production was observed in laying hens fed 0.3 ppm Sel-Plex in a combination with 20 ppm vitamin E being 2.5% higher than that in the control group. It was found that with 0.4 ppm Sel-Plex supplementation of the diet, the Se content in the egg increased from 12 up to 35 \( \mu \)g/egg over a period of 4 weeks. After this 4 week period, the Se concentration in the egg yolk and egg white stabilized and did not change significantly for the next 5 months of the experiment.