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Iodine content in consumer hen eggs

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This paper presents the latest information about the supply of iodine to meet its requirements in hens of laying type, on the basis of iodine content in egg yolk and about the importance of eggs as an iodine source in human nutrition. The Sandell-Kolthoff method was applied to determine iodine content in the yolk of eggs from 9 large flocks (54 eggs) and 16 small flocks (96 eggs) in 2004, and from 10 large flocks (135 eggs) and 15 small flocks (114 eggs) in 2005. Iodine content was also determined in the albumen of 70 eggs. In 2004, the iodine content in the yolk of eggs from large flocks was $1\ 014.1 \pm 356.6$ while in 2005 it amounted to $1\ 663.8 \pm 1\ 179.7$ µg/kg fresh matter ($P < 0.01$); the respective values for the yolk of eggs from small flocks in 2004 and 2005 were 307.1 ± 255.7 and 519.5 ± 508.2 µg/kg fresh matter ($P < 0.01$). Compared to 1996, in 2005, the iodine content in yolk increased by 123.7% in large flocks, and by 19.2% in small flocks. The iodine content in albumen was 16.2 ± 9.7 µg/kg fresh matter, and it accounted for 2.6–5.0% of the total iodine content in 1 egg. The correlation coefficient between iodine contents in yolk and albumen was $r = 0.67$. In the Czech Republic, 1 egg from large flocks contains on average 31.2 µg iodine while 1 egg from small flocks contains 10.0 µg. Eggs from large flocks cover 7–14% and from small flocks 2.2–4.4% of the daily iodine requirement in adults. Iodine concentrations exceeding 2 500 µg/kg yolk fresh matter in large flocks were measured between week 32 and 60 of the laying cycle and with daily intake of 0.116–0.132 mg iodine per hen.

Keywords:

iodine supplementation; yolk; albumen; iodine need

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