

## THE CHOLESTEROL AND FATTY ACID CONTENT OF CHICKEN AND DUCK EGGS

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The present investigation was initiated following the observation of a considerable variation in the cholesterol content of eggs analysed for a dietary experiment. Eggs were sampled from the major producers in five sites from four states (Vic., NSW, Qld, WA); the eggs were derived from 15 different layer strains. The same strains from the same sites were sampled on two occasions, six months apart. At each sampling, six eggs of about 50-55g were requested from each layer strain as well as information on the major feed ingredients of the layers. The age of the layers ranged from 30 to 77 weeks. In this study 291 eggs were examined from chickens and in a preliminary study 24 duck eggs were also analysed.

Information on egg weight, yolk weight and total edible weight was recorded for all samples and the lipids were extracted from the yolk by a standard chloroform-methanol procedure. An aliquot of the extract was saponified together with 5 $\alpha$ -cholestane and the cholesterol content was determined by capillary GLC. The recovery of cholesterol through the procedure was routinely determined. The fatty acid composition was measured on a representative number of samples of chicken and duck eggs by capillary GLC. The results for the chicken eggs are shown below:

	Total wt. (g)	Yolk(%)	Lipid(%)	Cholesterol(mg/100g)
Mean	58	31.1	10.5	380
SD	5	2.9	1.2	42
Range	45-79	22.8-39.6	7.9-14.0	300-542

The distribution of cholesterol values was skewed towards the lower values with 75% of results below 400mg/100g and 95% below 450mg/100g. The cholesterol content of eggs in the proposed new version of the Australian Tables of Food Composition is 450mg/100g (Cashel 1985). Six strains (110 observations) consistently gave cholesterol values below 415 mg/100g whereas for the other nine strains (181 observations) approximately one third of the values were above 415 mg/100g. The mean weight of the duck eggs was 76g, the percent yolk was 36.1, the percent lipid was 12.6 and the cholesterol content was 552mg/100g (range 460-658). The increased lipid content of the duck eggs was largely due to a higher concentration of 18:1 in these eggs which also contained higher concentrations of 16:0, 20:3, 20:4, 22:5 and lower levels of 18:2 and 22:6 fatty acids.

CASHEL, K. (1985). *J. Food Nutr.* 42: 23.

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