

Title            Compositional analysis of teas from Australian supermarkets  
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### **Abstract**

Caffeine, total amino acids, water extract and moisture content are considered to be quality indicators for leaf teas and teabags. These analyses were examined in 20 leaf teas and 36 teabags sampled from Australian supermarkets. About 70% of the analysed samples showed a moisture content higher than the maximum accepted level, 6.5%, for tea storage and marketing by the tea industries and traders. Water appropriate extract of 15 samples out of 36 teabags was lower than that of the teas without teabags, which indicates that the quality of the paper used for teabags needs to be evaluated. Moreover, one of the black leaf tea samples was found to have a water extract below the lower limit of international standards.

Four green and black teas of the same brand, claimed to contain less than 3% caffeine, were found to have 3–4%, the same as the other samples analysed in this study. The mean total contents of amino acids were 2.50% and 1.76% in black leaf teas and the teabags, respectively, whereas they were 3.44% and 2.28% in green leaf teas and the teabags, respectively. Furthermore, the weights of 28 teabags out of 36 samples were found to lie outside of the proposed  $\pm 2\%$  variation accepted by the tea industries and traders, and 4 samples showed even larger variation, 10% being out of the proposed weights. This investigation also showed that the solubility of caffeine and water extract was affected by the permeability of teabags, whereas total amino acids were very variable.

These results suggest that an efficient and practical quality control system for both imported and Australian-made teas in the Australian supermarkets should be developed, implemented and enforced. Chemical analysis should be a part of the system for establishing an objective assessment for the quality control.