

Metcalf, J.S., Morrison, L.F., Krienitz, L., Ballot, A., Krause, E., Kotut, K., Pütz, S., Wiegand, C., Pflugmacher, S. & Codd, G.A. 2006. Analysis of the cyanotoxins anatoxin-a and microcystins in Lesser Flamingo feathers. *Toxicology and Environmental Chemistry* 88: 159-167.

Abstract

Feathers from carcasses of the Lesser Flamingo (*Phoeniconaias minor*), which had died after ingesting cyanobacterial toxins (cyanotoxins) contained between 0.02 and 30.0 µg microcystin-LR equivalents per gram of feather according to HPLC and ELISA analysis of feather extracts. Anatoxin-a was detected less frequently in the Lesser Flamingo feathers, up to 0.8 µg anatoxin-a per gram of feather being recorded. When feathers from different body regions were analysed and compared for microcystins and anatoxin-a, wing feathers were found to contain the highest concentrations of these cyanotoxins, the order of concentration and frequency of analytical detection being wing > breast > head. Consistent with the presence of the microcystins and anatoxin-a in gut contents and the livers of the dead birds and negligible in vitro adsorption to feathers, the cyanotoxins associated with the feathers of the dead wild flamingos are inferred to be primarily of dietary origin.