

Methylmercury in rainbow trout (*Oncorhynchus mykiss*) from Lakes Okareka, Okaro, Rotomahana, Rotorua and Tarawera, North Island, New Zealand

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[https://doi.org/10.1016/0048-9697\(95\)04472-D](https://doi.org/10.1016/0048-9697(95)04472-D) ↗

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Abstract

Methylmercury (methyl Hg) was determined in muscle tissue of rainbow trout from five lakes in the North Island New Zealand to examine the within-lake variation of methyl Hg with fish length and age, and the between-lake differences of methyl Hg in fish due to geothermal emanations. Methyl Hg in trout ranged from 0.07 to 4.13 $\mu\text{g}\cdot\text{g}$ for all the lakes studied. There were distinct variations of methyl Hg with length and age in each lake. Lakes strongly influenced by geothermal input had methyl Hg increases with length and age. Methyl Hg in the trout increased slightly, or not at all in lakes with low geothermal input. Variability in methyl Hg in trout > 40 cm was observed in four lakes, which may be due to changes in trout diet. An analysis of covariance indicated there were different methyl Hg concentrations in trout from four lakes which varied with increased geothermal input. A principal components analysis of all the lakes yielded two major axes. The first was strongly correlated with geothermal input and the second with mean length. Therefore, geothermal emanations and fish size were important factors influencing methyl Hg in the trout.

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