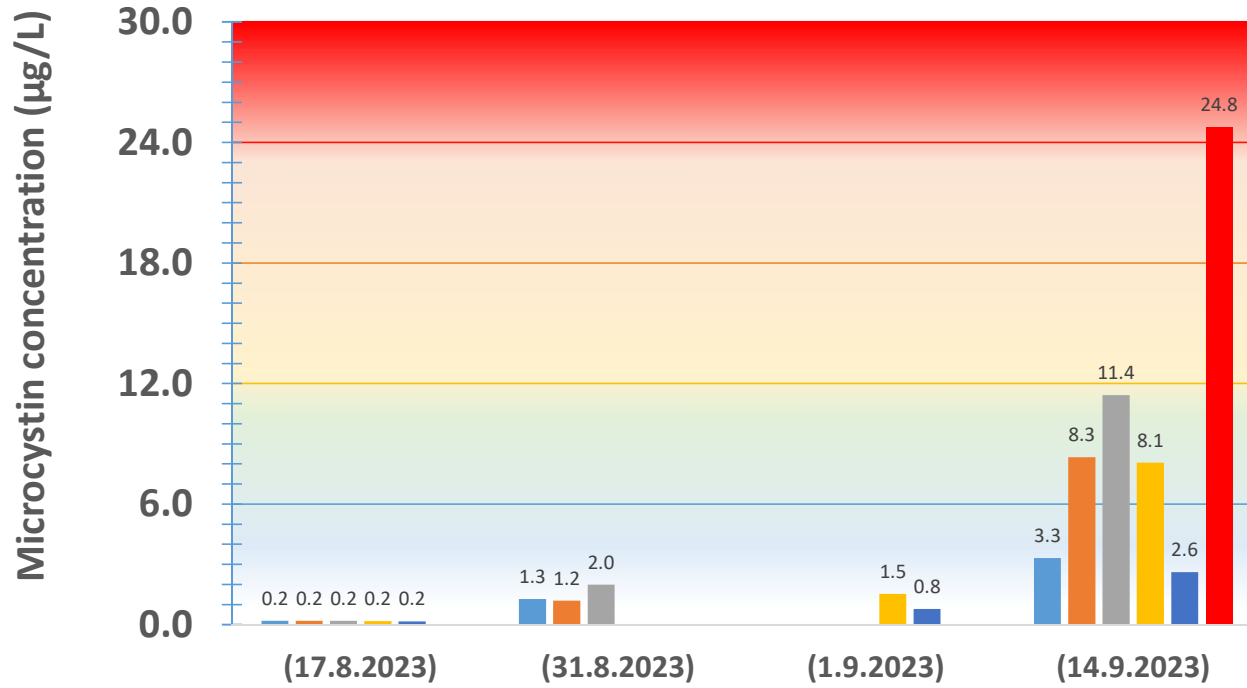


15.9.2023

Cyanobacterial hepatotoxin(Microcystin) concentration in Littoistenjärvi 2023



WHO recreational water guideline value for microcystin: 24 µg/L

WHO long term drinking-water guideline value for microcystin: 1 µg/L

Assay detection limit: 0.2 µg/L

■ 1_A_Saarten taus ■ 2_B_Koilliselkä ■ 3_C_Luoteisselkä ■ 4_A'_Hiekkaranta ■ 5_D'_Ristikallion Uimaranta ■ 6_B'_Pirtan Laituri

Analysis: 15.9.2023, Report by Sultana Akter, Dept of Life Technologies (Biotechnology), Faculty of Technology, Univ of Turku

On 15.9.2023, Littoistenjärvi water has microcystin (2.6~25 µg/L).

Note: Water near Pirtan Laituri has very high microcystin concentration (25 µg/L)



Interpretation (15.9.2023 SA)

Collection of Raw water samples : **17.8.2023-14-9.2023**,

Immunoassay analysis: 15.9.2023

Immunoassay detection limit on 15.9.2023: 0.2 µg/L of Microcystin-LR

Before analysis, samples were heated at 90 °C for 10 min to release cell bound toxins if any. The results represent the total cyclic peptide hepatotoxin amount (already released toxin in water and the cell bound toxin) .

For quantification, microcystin-LR was used as standard.

Result:

In Littoistenjärvi water, the detected cyanobacterial peptide hepatotoxin (free and cell bound microcystin) concentrations (µg/L) are as follows:

17.8.2023	1_A_Saarten taus (0.2 µg/L)
	2_B_Koilliselkä (0.2 µg/L)
	3_C_Luoteisselkä (0.2 µg/L)
	4_A'_Hiekkaranta (0.2 µg/L)
	5_D'_Ristikallion Uimaranta (0.2 µg/L)
31.8.2023	1_A_Saarten taus (1.3 µg/L)
	2_B_Koilliselkä (1.2 µg/L)
	3_C_Luoteisselkä (2 µg/L)
1.9.2029	4_A'_Hiekkaranta (1.5 µg/L)
	5_D'_Ristikallion Uimaranta (0.8 µg/L)
14.9.2023	1_A_Saarten taus (3.3 µg/L)
	2_B_Koilliselkä (8.3 µg/L)
	3_C_Luoteisselkä (11.4 µg/L)
	4_A'_Hiekkaranta (8.1 µg/L)
	5_D'_Ristikallion Uimaranta (2.6 µg/L)
	6_laituri_water (24.8 µg/L)

Note: The immunoassay detects cyanobacterial peptide hepatotoxins (microcystins and/or nodularin). The cyanobacteria may produce other toxic compound which are not detectable by the assay.

World Health Organization (WHO) recommended provisional guideline values

Provisional lifetime **drinking**-water guideline value for microcystin: **1 µg/L**

Provisional short-term (2 weeks)
drinking-water guideline value for microcystin
12 µg/L (Adult), 3 µg/L (children)

Provisional **recreational** water
guideline value for microcystin: **24 µg/L**

Reference:

Chorus, I., & Welker, M. (2021). Toxic cyanobacteria in water: a guide to their public health consequences, monitoring and management (p. 858). Taylor & Francis. P25-28

Date of analysis: 15.9.2023

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