**Investigation of the Effects of Heavy Metal Pollution on Surface Waters Before and During the COVID-19 Lockdown Periods in Bursa, Turkey**

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**Table S1.** I, S,and MACvalues (mg/L)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe\* | Mn\* | Cu\* | Al\*\*\* | Cr\*\* | Ni\* | Zn\* |
| Ideal values for heavy metals (mg/L)  (I) | 0.2 | 0.1 | 2 | 0.03 | 0.05 | 0.07 | 5 |
| Standard values for heavy metals (mg/L)  (S) | 0.3 | 0.4 | 1 | 0.2 | 0.1 | 0.02 | 3 |
| Maximum permissible concentration of the heavy metals  (MAC) (mg/L) | 0.3 | 0.4 | 2 | 0.005 | 0.05 | 0.07 | 3 |

**\***Ustaoğlu and Aydın, (2020)

\*\* Rezaei et al. (2019)

\*\*\* Kumar et al. (2019)

**Table S2.** The total ILCRingestion values for adults before the COVID-19 lockdown

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | ILCRingestion |
| S1 | 1.24E-01 | 5.66E-03 | 2.40E-04 | 1.79E-01 | 2.40E-04 | 7.67E-04 | 8.63E-04 | 3.10E-01 |
| S2 | 4.66E-02 | 2.59E-03 | 2.40E-04 | 6.33E-02 | 2.40E-04 | 2.40E-04 | 8.15E-04 | 1.14E-01 |
| S3 | 2.41E-02 | 3.16E-03 | 2.40E-04 | 3.74E-02 | 2.40E-04 | 2.40E-04 | 6.71E-04 | 6.60E-02 |
| S4 | 4.41E-03 | 2.40E-04 | 2.40E-04 | 5.18E-03 | 2.40E-04 | 5.99E-04 | 2.40E-04 | 1.11E-02 |
| S5 | 1.53E-03 | 2.40E-04 | 2.40E-04 | 1.63E-03 | 2.40E-04 | 5.99E-04 | 2.40E-04 | 4.72E-03 |
| S6 | 3.60E-02 | 4.84E-03 | 2.40E-04 | 3.13E-02 | 1.05E-03 | 8.15E-04 | 6.76E-03 | 8.09E-02 |
| S7 | 1.75E-02 | 1.97E-03 | 2.40E-04 | 1.63E-02 | 9.11E-04 | 2.40E-04 | 8.20E-03 | 4.54E-02 |
| S8 | 1.57E-02 | 4.03E-03 | 2.40E-04 | 1.38E-02 | 6.71E-04 | 5.99E-04 | 5.13E-03 | 4.02E-02 |
| S9 | 7.05E-03 | 3.64E-03 | 2.40E-04 | 5.80E-03 | 5.75E-04 | 1.87E-03 | 4.70E-03 | 2.39E-02 |
| S10 | 1.91E-02 | 7.34E-03 | 9.11E-04 | 2.11E-02 | 7.67E-04 | 1.44E-03 | 3.26E-03 | 5.39E-02 |
| S11 | 6.05E-02 | 1.18E-02 | 2.40E-04 | 4.66E-02 | 2.78E-03 | 9.30E-03 | 6.27E-02 | 1.94E-01 |
| S12 | 2.24E-01 | 1.74E-02 | 5.75E-04 | 2.59E-01 | 1.63E-03 | 3.36E-03 | 1.06E-02 | 5.17E-01 |
| S13 | 3.53E-02 | 1.15E-02 | 2.40E-04 | 3.64E-02 | 5.56E-03 | 1.01E-03 | 1.63E-03 | 9.17E-02 |
| S14 | 2.25E-02 | 5.27E-03 | 2.40E-04 | 3.41E-02 | 2.40E-04 | 8.63E-04 | 5.75E-04 | 6.38E-02 |

**Table S3.** The total ILCRingestion values for adults during the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | ILCRingestion |
| S1 | 4.17E-03 | 9.59E-04 | 2.40E-04 | 5.23E-03 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 1.13E-02 |
| S2 | 8.49E-03 | 3.21E-03 | 2.40E-04 | 1.09E-02 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 2.35E-02 |
| S3 | 2.41E-02 | 3.16E-03 | 2.40E-04 | 3.74E-02 | 2.40E-04 | 2.40E-04 | 6.71E-04 | 6.60E-02 |
| S4 | 3.01E-02 | 1.39E-03 | 2.40E-04 | 3.52E-02 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 6.77E-02 |
| S5 | 3.75E-02 | 1.34E-03 | 2.40E-04 | 3.42E-02 | 2.40E-04 | 2.40E-04 | 2.40E-04 | 7.40E-02 |
| S6 | 9.66E-02 | 8.73E-03 | 5.27E-04 | 1.14E-01 | 6.71E-04 | 1.01E-03 | 3.64E-03 | 2.26E-01 |
| S7 | 3.11E-02 | 2.68E-03 | 2.40E-04 | 3.09E-02 | 9.11E-04 | 2.40E-04 | 9.21E-03 | 7.52E-02 |
| S8 | 7.52E-02 | 4.51E-03 | 2.40E-04 | 7.57E-02 | 2.40E-04 | 2.40E-04 | 3.84E-03 | 1.60E-01 |
| S9 | 6.94E-02 | 4.89E-03 | 2.40E-04 | 8.78E-02 | 6.23E-04 | 1.15E-03 | 6.33E-03 | 1.70E-01 |
| S10 | 9.66E-02 | 8.73E-03 | 5.27E-04 | 1.14E-01 | 6.71E-04 | 1.01E-03 | 3.64E-03 | 2.26E-01 |
| S11 | 7.07E-02 | 1.04E-02 | 1.10E-03 | 4.45E-02 | 2.68E-03 | 4.17E-03 | 5.79E-02 | 1.91E-01 |
| S12 | N.D. | 4.38E-02 | 3.93E-03 | N.D. | 5.80E-03 | 5.90E-03 | 2.68E-02 | 8.62E-02 |
| S13 | 8.91E-02 | 1.22E-02 | 2.40E-04 | 7.85E-02 | 4.94E-03 | 1.25E-03 | 5.56E-03 | 1.92E-01 |
| S14 | 3.56E-02 | 4.75E-03 | 2.40E-04 | 4.90E-02 | 2.40E-04 | 2.40E-04 | 5.27E-04 | 9.07E-02 |

**N.D**.: Not Detection

**Table S4.** The total ILCRdermal values for adults before the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | ILCRdermal |
| S1 | 1.58E-03 | 7.21E-05 | 3.05E-06 | 2.28E-03 | 3.05E-06 | 3.91E-06 | 6.60E-06 | 3.94E-03 |
| S2 | 5.94E-04 | 3.30E-05 | 3.05E-06 | 8.06E-04 | 3.05E-06 | 1.22E-06 | 6.23E-06 | 1.45E-03 |
| S3 | 3.07E-04 | 4.03E-05 | 3.05E-06 | 4.76E-04 | 3.05E-06 | 1.22E-06 | 5.13E-06 | 8.36E-04 |
| S4 | 5.62E-05 | 3.05E-06 | 3.05E-06 | 6.60E-05 | 3.05E-06 | 3.05E-06 | 1.83E-06 | 1.36E-04 |
| S5 | 1.95E-05 | 3.05E-06 | 3.05E-06 | 2.08E-05 | 3.05E-06 | 3.05E-06 | 1.83E-06 | 5.43E-05 |
| S6 | 4.58E-04 | 6.17E-05 | 3.05E-06 | 3.98E-04 | 1.34E-05 | 4.15E-06 | 5.17E-05 | 9.90E-04 |
| S7 | 2.24E-04 | 2.50E-05 | 3.05E-06 | 2.07E-04 | 1.16E-05 | 1.22E-06 | 6.27E-05 | 5.34E-04 |
| S8 | 2.00E-04 | 5.13E-05 | 3.05E-06 | 1.75E-04 | 8.55E-06 | 3.05E-06 | 3.92E-05 | 4.81E-04 |
| S9 | 8.98E-05 | 4.64E-05 | 3.05E-06 | 7.39E-05 | 7.33E-06 | 9.53E-06 | 3.59E-05 | 1.70E-01 |
| S10 | 2.44E-04 | 9.34E-05 | 1.16E-05 | 2.69E-04 | 9.77E-06 | 7.33E-06 | 2.49E-05 | 2.26E-01 |
| S11 | 7.70E-04 | 1.51E-04 | 3.05E-06 | 5.94E-04 | 3.54E-05 | 4.74E-05 | 4.79E-04 | 1.91E-01 |
| S12 | 2.85E-03 | 2.22E-04 | 7.33E-06 | 3.30E-03 | 2.08E-05 | 1.71E-05 | 8.10E-05 | 8.62E-02 |
| S13 | 4.50E-04 | 1.22E-02 | 2.40E-04 | 7.85E-02 | 4.94E-03 | 1.25E-03 | 5.56E-03 | 1.92E-01 |
| S14 | 2.86E-04 | 4.75E-03 | 2.40E-04 | 4.90E-02 | 2.40E-04 | 2.40E-04 | 5.27E-04 | 9.07E-02 |

**Table S5.** The total ILCRdermal values for adults during the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | ILCRdermal |
| S1 | 5.31E-05 | 1.22E-05 | 3.05E-06 | 6.66E-05 | 3.05E-06 | 1.22E-06 | 1.83E-06 | 1.41E-04 |
| S2 | 1.08E-04 | 4.09E-05 | 3.05E-06 | 1.39E-04 | 3.05E-06 | 1.22E-06 | 1.83E-06 | 2.97E-04 |
| S3 | 3.07E-04 | 4.03E-05 | 3.05E-06 | 4.76E-04 | 3.05E-06 | 1.22E-06 | 5.13E-06 | 8.36E-04 |
| S4 | 3.83E-04 | 1.77E-05 | 3.05E-06 | 4.48E-04 | 3.05E-06 | 1.22E-06 | 1.83E-06 | 8.59E-04 |
| S5 | 4.78E-04 | 1.71E-05 | 3.05E-06 | 4.36E-04 | 3.05E-06 | 1.22E-06 | 1.83E-06 | 9.40E-04 |
| S6 | 1.23E-03 | 1.11E-04 | 6.72E-06 | 1.46E-03 | 8.55E-06 | 5.13E-06 | 2.78E-05 | 2.85E-03 |
| S7 | 3.96E-04 | 3.42E-05 | 3.05E-06 | 3.93E-04 | 1.16E-05 | 1.22E-06 | 7.03E-05 | 9.09E-04 |
| S8 | 9.58E-04 | 5.74E-05 | 3.05E-06 | 9.64E-04 | 3.05E-06 | 1.22E-06 | 2.93E-05 | 2.02E-03 |
| S9 | 8.84E-04 | 6.23E-05 | 3.05E-06 | 1.12E-03 | 7.94E-06 | 5.86E-06 | 4.84E-05 | 2.13E-03 |
| S10 | 1.23E-03 | 1.11E-04 | 6.72E-06 | 1.46E-03 | 8.55E-06 | 5.13E-06 | 2.78E-05 | 2.85E-03 |
| S11 | 9.00E-04 | 1.33E-04 | 1.40E-05 | 5.67E-04 | 3.42E-05 | 2.13E-05 | 4.42E-04 | 2.11E-03 |
| S12 | N.D. | 5.58E-04 | 5.01E-05 | N.D. | 7.39E-05 | 3.00E-05 | 2.04E-04 | 9.17E-04 |
| S13 | 1.14E-03 | 1.55E-04 | 3.05E-06 | 1.00E-03 | 6.29E-05 | 6.35E-06 | 4.25E-05 | 2.40E-03 |
| S14 | 4.54E-04 | 6.05E-05 | 3.05E-06 | 6.24E-04 | 3.05E-06 | 1.22E-06 | 4.03E-06 | 1.15E-03 |

**N.D**.: Not Detection

**Table S6.** The total ILCRingestion values for children before the COVID-19 lockdown

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | ILCRingestion |
| S1 | 1.02E-02 | 4.66E-04 | 1.98E-05 | 1.47E-02 | 1.98E-05 | 6.32E-05 | 7.12E-05 | 2.56E-02 |
| S2 | 3.84E-03 | 2.13E-04 | 1.98E-05 | 5.22E-03 | 1.98E-05 | 1.98E-05 | 6.72E-05 | 9.40E-03 |
| S3 | 1.98E-03 | 2.61E-04 | 1.98E-05 | 3.08E-03 | 1.98E-05 | 1.98E-05 | 5.53E-05 | 5.44E-03 |
| S4 | 3.64E-04 | 1.98E-05 | 1.98E-05 | 4.27E-04 | 1.98E-05 | 4.94E-05 | 1.98E-05 | 9.19E-04 |
| S5 | 1.26E-04 | 1.98E-05 | 1.98E-05 | 1.34E-04 | 1.98E-05 | 4.94E-05 | 1.98E-05 | 3.89E-04 |
| S6 | 2.96E-03 | 3.99E-04 | 1.98E-05 | 2.58E-03 | 8.70E-05 | 6.72E-05 | 5.57E-04 | 6.67E-03 |
| S7 | 1.45E-03 | 1.62E-04 | 1.98E-05 | 1.34E-03 | 7.51E-05 | 1.98E-05 | 6.76E-04 | 3.74E-03 |
| S8 | 1.30E-03 | 3.32E-04 | 1.98E-05 | 1.13E-03 | 5.53E-05 | 4.94E-05 | 4.23E-04 | 3.31E-03 |
| S9 | 5.81E-04 | 3.00E-04 | 1.98E-05 | 4.78E-04 | 4.74E-05 | 1.54E-04 | 3.87E-04 | 1.97E-03 |
| S10 | 1.58E-03 | 6.05E-04 | 7.51E-05 | 1.74E-03 | 6.32E-05 | 1.19E-04 | 2.69E-04 | 4.45E-03 |
| S11 | 4.98E-03 | 9.76E-04 | 1.98E-05 | 3.84E-03 | 2.29E-04 | 7.67E-04 | 5.17E-03 | 1.60E-02 |
| S12 | 1.85E-02 | 1.43E-03 | 4.74E-05 | 2.14E-02 | 1.34E-04 | 2.77E-04 | 8.74E-04 | 4.26E-02 |
| S13 | 2.91E-03 | 9.49E-04 | 1.98E-05 | 3.00E-03 | 4.59E-04 | 8.30E-05 | 1.34E-04 | 7.56E-03 |
| S14 | 1.85E-03 | 4.35E-04 | 1.98E-05 | 2.81E-03 | 1.98E-05 | 7.12E-05 | 4.74E-05 | 5.26E-03 |

**Table S7.** The total ILCRingestion values for children during the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | ILCRingestion |
| S1 | 3.44E-04 | 7.91E-05 | 1.98E-05 | 4.31E-04 | 1.98E-05 | 1.98E-05 | 1.98E-05 | 9.33E-04 |
| S2 | 7.00E-04 | 2.65E-04 | 1.98E-05 | 8.97E-04 | 1.98E-05 | 1.98E-05 | 1.98E-05 | 1.94E-03 |
| S3 | 1.98E-03 | 2.61E-04 | 1.98E-05 | 3.08E-03 | 1.98E-05 | 1.98E-05 | 5.53E-05 | 5.44E-03 |
| S4 | 2.48E-03 | 1.15E-04 | 1.98E-05 | 2.90E-03 | 1.98E-05 | 1.98E-05 | 1.98E-05 | 5.58E-03 |
| S5 | 3.09E-03 | 1.11E-04 | 1.98E-05 | 2.82E-03 | 1.98E-05 | 1.98E-05 | 1.98E-05 | 6.10E-03 |
| S6 | 7.97E-03 | 7.19E-04 | 4.35E-05 | 9.43E-03 | 5.53E-05 | 8.30E-05 | 3.00E-04 | 1.86E-02 |
| S7 | 2.56E-03 | 2.21E-04 | 1.98E-05 | 2.55E-03 | 7.51E-05 | 1.98E-05 | 7.59E-04 | 6.20E-03 |
| S8 | 6.20E-03 | 3.72E-04 | 1.98E-05 | 6.24E-03 | 1.98E-05 | 1.98E-05 | 3.16E-04 | 1.32E-02 |
| S9 | 5.72E-03 | 4.03E-04 | 1.98E-05 | 7.24E-03 | 5.14E-05 | 9.49E-05 | 5.22E-04 | 1.41E-02 |
| S10 | 7.97E-03 | 7.19E-04 | 4.35E-05 | 9.43E-03 | 5.53E-05 | 8.30E-05 | 3.00E-04 | 1.86E-02 |
| S11 | 5.83E-03 | 8.58E-04 | 9.09E-05 | 3.67E-03 | 2.21E-04 | 3.44E-04 | 4.77E-03 | 1.58E-02 |
| S12 | N.D. | 3.61E-03 | 3.24E-04 | N.D. | 4.78E-04 | 4.86E-04 | 2.21E-03 | 7.11E-03 |
| S13 | 7.35E-03 | 1.00E-03 | 1.98E-05 | 6.47E-03 | 4.07E-04 | 1.03E-04 | 4.59E-04 | 1.58E-02 |
| S14 | 2.94E-03 | 3.91E-04 | 1.98E-05 | 4.04E-03 | 1.98E-05 | 1.98E-05 | 4.35E-05 | 7.48E-03 |

**N.D**.: Not Detection

**Table S8.** The total ILCRdermal values for children before the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | ILCRdermal |
| S1 | 1.49E-04 | 6.81E-06 | 2.88E-07 | 2.15E-04 | 2.88E-07 | 3.69E-07 | 6.23E-07 | 3.72E-04 |
| S2 | 5.61E-05 | 3.12E-06 | 2.88E-07 | 7.62E-05 | 2.88E-07 | 1.15E-07 | 5.88E-07 | 1.37E-04 |
| S3 | 2.90E-05 | 3.81E-06 | 2.88E-07 | 4.50E-05 | 2.88E-07 | 1.15E-07 | 4.85E-07 | 7.89E-05 |
| S4 | 5.31E-06 | 2.88E-07 | 2.88E-07 | 6.23E-06 | 2.88E-07 | 2.88E-07 | 1.73E-07 | 1.29E-05 |
| S5 | 1.85E-06 | 2.88E-07 | 2.88E-07 | 1.96E-06 | 2.88E-07 | 2.88E-07 | 1.73E-07 | 5.13E-06 |
| S6 | 4.33E-05 | 5.83E-06 | 2.88E-07 | 3.76E-05 | 1.27E-06 | 3.92E-07 | 4.88E-06 | 9.35E-05 |
| S7 | 2.11E-05 | 2.37E-06 | 2.88E-07 | 1.96E-05 | 1.10E-06 | 1.15E-07 | 5.92E-06 | 5.05E-05 |
| S8 | 1.89E-05 | 4.85E-06 | 2.88E-07 | 1.66E-05 | 8.08E-07 | 2.88E-07 | 3.70E-06 | 4.54E-05 |
| S9 | 8.48E-06 | 4.38E-06 | 2.88E-07 | 6.98E-06 | 6.92E-07 | 9.00E-07 | 3.39E-06 | 2.51E-05 |
| S10 | 2.30E-05 | 8.83E-06 | 1.10E-06 | 2.54E-05 | 9.23E-07 | 6.92E-07 | 2.35E-06 | 6.23E-05 |
| S11 | 7.27E-05 | 1.42E-05 | 2.88E-07 | 5.61E-05 | 3.35E-06 | 4.48E-06 | 4.53E-05 | 1.96E-04 |
| S12 | 2.70E-04 | 2.09E-05 | 6.92E-07 | 3.12E-04 | 1.96E-06 | 1.62E-06 | 7.65E-06 | 6.15E-04 |
| S13 | 4.25E-05 | 1.38E-05 | 2.88E-07 | 4.38E-05 | 6.69E-06 | 4.85E-07 | 1.18E-06 | 1.09E-04 |
| S14 | 2.71E-05 | 6.35E-06 | 2.88E-07 | 4.11E-05 | 2.88E-07 | 4.15E-07 | 4.15E-07 | 7.59E-05 |

**Table S9.** The total ILCRdermal values for children during the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | ILCRdermal |
| S1 | 5.02E-06 | 1.15E-06 | 2.88E-07 | 6.29E-06 | 2.88E-07 | 1.15E-07 | 1.73E-07 | 1.33E-05 |
| S2 | 1.02E-05 | 3.87E-06 | 2.88E-07 | 1.31E-05 | 2.88E-07 | 1.15E-07 | 1.73E-07 | 2.80E-05 |
| S3 | 2.90E-05 | 3.81E-06 | 2.88E-07 | 4.50E-05 | 2.88E-07 | 1.15E-07 | 4.85E-07 | 7.89E-05 |
| S4 | 3.62E-05 | 1.67E-06 | 2.88E-07 | 4.23E-05 | 2.88E-07 | 1.15E-07 | 1.73E-07 | 8.11E-05 |
| S5 | 4.51E-05 | 1.62E-06 | 2.88E-07 | 4.12E-05 | 2.88E-07 | 1.15E-07 | 1.73E-07 | 8.88E-05 |
| S6 | 1.16E-04 | 1.05E-05 | 6.35E-07 | 1.38E-04 | 8.08E-07 | 4.85E-07 | 2.63E-06 | 2.69E-04 |
| S7 | 3.74E-05 | 3.23E-06 | 2.88E-07 | 3.72E-05 | 1.10E-06 | 1.15E-07 | 6.65E-06 | 8.59E-05 |
| S8 | 9.05E-05 | 5.42E-06 | 2.88E-07 | 9.10E-05 | 2.88E-07 | 1.15E-07 | 2.77E-06 | 1.90E-04 |
| S9 | 8.35E-05 | 5.88E-06 | 2.88E-07 | 1.06E-04 | 7.50E-07 | 5.54E-07 | 4.57E-06 | 2.01E-04 |
| S10 | 1.16E-04 | 1.05E-05 | 6.35E-07 | 1.38E-04 | 8.08E-07 | 4.85E-07 | 2.63E-06 | 2.69E-04 |
| S11 | 8.50E-05 | 1.25E-05 | 1.33E-06 | 5.35E-05 | 3.23E-06 | 2.01E-06 | 4.18E-05 | 1.99E-04 |
| S12 | N.D. | 5.27E-05 | 4.73E-06 | N.D. | 6.98E-06 | 2.84E-06 | 1.93E-05 | 8.66E-05 |
| S13 | 1.07E-04 | 1.47E-05 | 2.88E-07 | 9.44E-05 | 5.94E-06 | 6.00E-07 | 4.02E-06 | 2.27E-04 |
| S14 | 4.29E-05 | 5.71E-06 | 2.88E-07 | 5.90E-05 | 2.88E-07 | 1.15E-07 | 3.81E-07 | 1.09E-04 |

**N.D**.: Not Detection

**Table S10.** The total HI values for adults before the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | Total HI |
| S1 | 1.04E+00 | 8.70E-01 | 1.49E-02 | 4.44E-01 | 6.61E-01 | 9.12E-02 | 6.97E-03 | 3.13E+00 |
| S2 | 3.93E-01 | 3.98E-01 | 1.49E-02 | 1.57E-01 | 6.61E-01 | 2.85E-02 | 6.58E-03 | 1.66E+00 |
| S3 | 2.03E-01 | 4.87E-01 | 1.49E-02 | 9.28E-02 | 6.61E-01 | 2.85E-02 | 5.42E-03 | 1.49E+00 |
| S4 | 3.72E-02 | 3.69E-02 | 1.49E-02 | 1.29E-02 | 6.61E-01 | 7.12E-02 | 1.94E-03 | 8.36E-01 |
| S5 | 1.29E-02 | 3.69E-02 | 1.49E-02 | 4.05E-03 | 6.61E-01 | 7.12E-02 | 1.94E-03 | 8.03E-01 |
| S6 | 3.03E-01 | 7.45E-01 | 1.49E-02 | 7.76E-02 | 2.91E+00 | 9.69E-02 | 5.46E-02 | 4.20E+00 |
| S7 | 1.48E-01 | 3.02E-01 | 1.49E-02 | 4.03E-02 | 2.51E+00 | 2.85E-02 | 6.62E-02 | 3.11E+00 |
| S8 | 1.33E-01 | 6.19E-01 | 1.49E-02 | 3.42E-02 | 1.85E+00 | 7.12E-02 | 4.14E-02 | 2.76E+00 |
| S9 | 5.95E-02 | 5.60E-01 | 1.49E-02 | 1.44E-02 | 1.59E+00 | 2.22E-01 | 3.79E-02 | 2.50E+00 |
| S10 | 1.61E-01 | 1.13E+00 | 5.65E-02 | 5.24E-02 | 2.12E+00 | 1.71E-01 | 2.63E-02 | 3.72E+00 |
| S11 | 5.10E-01 | 1.82E+00 | 1.49E-02 | 1.16E-01 | 7.67E+00 | 1.11E+00 | 5.06E-01 | 1.17E+01 |
| S12 | 1.89E+00 | 2.68E+00 | 3.57E-02 | 6.44E-01 | 4.50E+00 | 3.99E-01 | 8.56E-02 | 1.02E+01 |
| S13 | 2.98E-01 | 1.77E+00 | 1.49E-02 | 9.03E-02 | 1.53E+01 | 1.20E-01 | 1.32E-02 | 1.76E+01 |
| S14 | 1.90E-01 | 8.11E-01 | 1.49E-02 | 8.47E-02 | 6.61E-01 | 1.03E-01 | 4.65E-03 | 1.87E+00 |

**Table S11.** The total HI values for adults during the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | Total HI |
| S1 | 3.52E-02 | 1.47E-01 | 1.49E-02 | 1.30E-02 | 6.61E-01 | 2.85E-02 | 1.94E-03 | 9.02E-01 |
| S2 | 7.16E-02 | 4.94E-01 | 1.49E-02 | 2.70E-02 | 6.61E-01 | 2.85E-02 | 1.94E-03 | 1.30E+00 |
| S3 | 2.93E-01 | 6.71E-01 | 1.49E-02 | 8.12E-02 | 6.61E-01 | 2.85E-02 | 1.01E-02 | 1.76E+00 |
| S4 | 2.44E-01 | 1.70E-01 | 1.49E-02 | 1.16E-01 | 6.61E-01 | 7.12E-02 | 1.94E-03 | 1.28E+00 |
| S5 | 1.50E-02 | 3.69E-02 | 1.49E-02 | 4.05E-03 | 6.61E-01 | 7.12E-02 | 1.94E-03 | 8.05E-01 |
| S6 | 9.39E-02 | 4.35E-01 | 1.49E-02 | 1.80E-02 | 6.61E-01 | 7.12E-02 | 2.40E-02 | 1.32E+00 |
| S7 | 1.25E-01 | 1.77E-01 | 1.49E-02 | 2.65E-02 | 6.61E-01 | 2.85E-02 | 2.56E-02 | 1.06E+00 |
| S8 | 1.08E-01 | 3.69E-01 | 1.49E-02 | 1.99E-02 | 6.61E-01 | 7.12E-02 | 2.21E-02 | 1.27E+00 |
| S9 | 1.38E-01 | 4.42E-01 | 3.27E-02 | 5.94E-02 | 6.61E-01 | 1.31E-01 | 6.08E-02 | 1.52E+00 |
| S10 | 1.57E+00 | 1.40E+00 | 5.95E-02 | 5.03E-01 | 4.23E+00 | 2.34E-01 | 6.47E-02 | 8.06E+00 |
| S11 | 2.23E-01 | 1.11E+00 | 1.49E-02 | 6.53E-02 | 2.25E+00 | 6.84E-01 | 1.99E-01 | 4.55E+00 |
| S12 | N.D. | 1.54E+00 | 6.54E-02 | N.D. | 4.37E+00 | 3.42E-01 | 1.12E-01 | 8.70E+00 |
| S13 | 7.05E-01 | 8.92E-01 | 2.38E-02 | 2.49E-01 | 6.09E+00 | 1.27E-01 | 3.91E-02 | 8.13E+00 |
| S14 | 8.07E-01 | 1.12E+00 | 1.49E-02 | 3.43E-01 | 6.61E-01 | 2.85E-02 | 6.97E-03 | 2.98E+00 |

**N.D**.: Not Detection

**Table S12.** The total HI values for children before the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | Total HI |
| S1 | 4.34E-01 | 3.71E-01 | 6.17E-03 | 1.84E-01 | 3.01E-01 | 3.76E-02 | 2.88E-03 | 1.34E+00 |
| S2 | 1.64E-01 | 1.70E-01 | 6.17E-03 | 6.52E-02 | 3.01E-01 | 1.18E-02 | 2.72E-03 | 7.21E-01 |
| S3 | 8.45E-02 | 2.07E-01 | 6.17E-03 | 3.85E-02 | 3.01E-01 | 1.18E-02 | 2.24E-03 | 6.51E-01 |
| S4 | 1.55E-02 | 1.57E-02 | 6.17E-03 | 5.33E-03 | 3.01E-01 | 2.94E-02 | 8.01E-04 | 3.74E-01 |
| S5 | 5.39E-03 | 1.57E-02 | 6.17E-03 | 1.68E-03 | 3.01E-01 | 2.94E-02 | 8.01E-04 | 3.60E-01 |
| S6 | 1.26E-01 | 3.17E-01 | 6.17E-03 | 3.22E-02 | 1.32E+00 | 4.00E-02 | 2.26E-02 | 1.86E+00 |
| S7 | 6.16E-02 | 1.29E-01 | 6.17E-03 | 1.67E-02 | 1.14E+00 | 1.18E-02 | 2.74E-02 | 1.39E+00 |
| S8 | 5.52E-02 | 2.64E-01 | 6.17E-03 | 1.42E-02 | 8.42E-01 | 2.94E-02 | 1.71E-02 | 1.23E+00 |
| S9 | 2.47E-02 | 2.39E-01 | 6.17E-03 | 5.98E-03 | 7.21E-01 | 9.17E-02 | 1.57E-02 | 1.10E+00 |
| S10 | 6.72E-02 | 4.81E-01 | 2.35E-02 | 2.17E-02 | 9.62E-01 | 7.05E-02 | 1.09E-02 | 1.64E+00 |
| S11 | 2.12E-01 | 7.76E-01 | 6.17E-03 | 4.80E-02 | 3.49E+00 | 4.56E-01 | 2.09E-01 | 5.20E+00 |
| S12 | 7.87E-01 | 1.14E+00 | 1.48E-02 | 2.67E-01 | 2.04E+00 | 1.65E-01 | 3.54E-02 | 4.45E+00 |
| S13 | 1.24E-01 | 7.54E-01 | 6.17E-03 | 3.75E-02 | 6.97E+00 | 4.94E-02 | 5.44E-03 | 7.95E+00 |
| S14 | 7.90E-02 | 3.46E-01 | 6.17E-03 | 3.52E-02 | 3.01E-01 | 4.23E-02 | 1.92E-03 | 8.12E-01 |

**Table S13.** The total HI values for children during the COVID-19 lockdown period

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fe | Mn | Cu | Al | Cr | Ni | Zn | Total HI |
| S1 | 1.46E-02 | 6.28E-02 | 6.17E-03 | 5.38E-03 | 3.01E-01 | 1.18E-02 | 8.01E-04 | 4.03E-01 |
| S2 | 2.98E-02 | 2.10E-01 | 6.17E-03 | 1.12E-02 | 3.01E-01 | 1.18E-02 | 8.01E-04 | 5.71E-01 |
| S3 | 1.22E-01 | 2.86E-01 | 6.17E-03 | 3.37E-02 | 3.01E-01 | 1.18E-02 | 4.16E-03 | 7.65E-01 |
| S4 | 1.02E-01 | 7.22E-02 | 6.17E-03 | 4.80E-02 | 3.01E-01 | 2.94E-02 | 8.01E-04 | 5.60E-01 |
| S5 | 6.23E-03 | 1.57E-02 | 6.17E-03 | 1.68E-03 | 3.01E-01 | 2.94E-02 | 8.01E-04 | 3.61E-01 |
| S6 | 3.91E-02 | 1.85E-01 | 6.17E-03 | 7.46E-03 | 3.01E-01 | 2.94E-02 | 9.93E-03 | 5.78E-01 |
| S7 | 5.19E-02 | 7.54E-02 | 6.17E-03 | 1.10E-02 | 3.01E-01 | 1.18E-02 | 1.06E-02 | 4.68E-01 |
| S8 | 4.51E-02 | 1.57E-01 | 6.17E-03 | 8.25E-03 | 3.01E-01 | 2.94E-02 | 9.13E-03 | 5.56E-01 |
| S9 | 5.72E-02 | 1.88E-01 | 1.36E-02 | 2.46E-02 | 3.01E-01 | 5.41E-02 | 2.51E-02 | 6.64E-01 |
| S10 | 6.55E-01 | 5.97E-01 | 2.47E-02 | 2.09E-01 | 1.92E+00 | 9.64E-02 | 2.67E-02 | 3.53E+00 |
| S11 | 9.26E-02 | 4.74E-01 | 6.17E-03 | 2.71E-02 | 1.02E+00 | 2.82E-01 | 8.23E-02 | 1.98E+00 |
| S12 | N.D. | 6.56E-01 | 2.72E-02 | N.D. | 1.98E+00 | 1.41E-01 | 4.64E-02 | 2.85E+00 |
| S13 | 2.93E-01 | 3.80E-01 | 9.88E-03 | 1.03E-01 | 2.77E+00 | 5.23E-02 | 1.62E-02 | 3.62E+00 |
| S14 | 3.36E-01 | 4.77E-01 | 6.17E-03 | 1.42E-01 | 3.01E-01 | 1.18E-02 | 2.88E-03 | 1.28E+00 |

**N.D**.: Not Detection

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