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**Support information**

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**Metal biological enrichment capacities, distribution patterns and health risk implications in a major aquacultured fish species worldwide**

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Fig.S1. Map of the sampling pond from the largest base of cultured sea bass *Lateolabrax japonicas*.

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**Fig. S2** The cast net in this study and showing how to use it to get the *Lateolabrax japonicas*.

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**Fig. S3** Distribution of bioconcentration (BCF) in the parts of *Lateolabrax japonicas*.

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**Fig. S4** Distribution of bioaccumulation (BAF) in the parts of *Lateolabrax japonicas*.

**Table S1** Bioconcentration (BCF) in the parts of *Lateolabrax japonicas*.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fish parts |  | Al | Cr | Mn | Fe | Ni | Cu | Zn | As | Cd | Pb |
| Dorsal muscle | Mean | 172.78 | 315.74 | 73.23 | 885.20 | 171.14 | 25.61 | 93.10 | 2.86 | 0.29 | 700.61 |
| SD | 84.06 | 373.34 | 44.34 | 682.92 | 140.17 | 8.86 | 25.10 | 0.89 | 0.17 | 595.05 |
| Viscera | Mean | 514.14 | 93.24 | 271.67 | 1324.37 | 76.29 | 417.51 | 92.29 | 1.27 | 0.78 | 267.68 |
| SD | 493.52 | 178.68 | 594.05 | 1690.63 | 116.69 | 587.33 | 125.35 | 0.64 | 0.96 | 100.50 |
| Backbone | Mean | 110.06 | 680.46 | 104.72 | 603.57 | 278.22 | 32.27 | 387.10 | 1.40 | 0.33 | 451.51 |
| SD | 31.56 | 924.14 | 24.89 | 252.20 | 333.75 | 14.70 | 96.68 | 0.59 | 0.10 | 176.31 |
| Gill | Mean | 391.41 | 1314.02 | 237.52 | 2823.17 | 669.11 | 103.04 | 514.63 | 1.10 | 0.65 | 1502.81 |
| SD | 228.00 | 2006.56 | 76.28 | 1224.05 | 914.00 | 55.17 | 181.43 | 0.47 | 0.20 | 1001.52 |
| Stomach content | Mean | 2410.03 | 2034.06 | 978.77 | 15343.88 | 961.48 | 273.83 | 264.14 | 1.04 | 2.39 | 1257.85 |
| SD | 360.85 | 1457.60 | 233.08 | 792.12 | 493.23 | 25.83 | 41.75 | 0.24 | 0.66 | 537.75 |

**Table S2** Bioaccumulation (BAF) in the parts of *Lateolabrax japonicas*.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fish parts |  | Al | Cr | Mn | Fe | Ni | Cu | Zn | As | Cd | Pb |
| Dorsal muscle | Mean | 6.70E-04 | 9.86E-03 | 1.56E-03 | 1.24E-03 | 9.69E-03 | 2.64E-02 | 2.50E-01 | 2.07E-01 | 2.99E-05 | 8.23E-03 |
| SD | 3.26E-04 | 1.17E-02 | 9.45E-04 | 9.56E-04 | 7.94E-03 | 9.12E-03 | 6.74E-02 | 6.42E-02 | 1.78E-05 | 6.99E-03 |
| Viscera | Mean | 1.99E-03 | 2.91E-03 | 5.79E-03 | 1.85E-03 | 4.32E-03 | 4.30E-01 | 2.48E-01 | 9.24E-02 | 8.00E-05 | 3.14E-03 |
| SD | 1.91E-03 | 5.58E-03 | 1.27E-02 | 2.37E-03 | 6.61E-03 | 6.05E-01 | 3.37E-01 | 4.60E-02 | 9.81E-05 | 1.18E-03 |
| Backbone | Mean | 4.27E-04 | 2.13E-02 | 2.23E-03 | 8.45E-04 | 1.58E-02 | 3.32E-02 | **1.04E+00** | 1.01E-01 | 3.39E-05 | 5.30E-03 |
| SD | 1.22E-04 | 2.89E-02 | 5.30E-04 | 3.53E-04 | 1.89E-02 | 1.51E-02 | 2.60E-01 | 4.24E-02 | 1.02E-05 | 2.07E-03 |
| Gill | Mean | 1.52E-03 | 4.10E-02 | 5.06E-03 | 3.95E-03 | 3.79E-02 | 1.06E-01 | **1.38E+00** | 7.96E-02 | 6.62E-05 | 1.76E-02 |
| SD | 8.84E-04 | 6.27E-02 | 1.63E-03 | 1.71E-03 | 5.17E-02 | 5.68E-02 | 4.87E-01 | 3.38E-02 | 2.07E-05 | 1.18E-02 |
| Stomach content | Mean | 9.35E-03 | 6.35E-02 | 2.09E-02 | 2.15E-02 | 5.44E-02 | 2.82E-01 | 7.09E-01 | 7.51E-02 | 2.44E-03 | 1.48E-02 |
| SD | 1.40E-03 | 4.55E-02 | 4.97E-03 | 1.11E-03 | 2.79E-02 | 2.66E-02 | 1.12E-01 | 1.72E-02 | 6.77E-02 | 6.32E-03 |

**Table S3** Biomagnification (BMF) in the parts of *Lateolabrax japonicas*.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fish parts |  | Al | Cr | Mn | Fe | Ni | Cu | Zn | As | Cd | Pb |
| Dorsal muscle | Mean | 9.87E-02 | 3.13E-01 | 3.31E-02 | 8.97E-02 | 1.46E-01 | 9.97E-02 | 2.30E-01 | **1.83E+00** | 5.62E-05 | 8.38E-01 |
| SD | 4.80E-02 | 3.70E-01 | 2.00E-02 | 6.92E-02 | 1.19E-01 | 3.45E-02 | 6.21E-02 | 5.69E-01 | 3.36E-05 | 7.12E-01 |
| Viscera | Mean | 2.94E-01 | 9.23E-02 | 1.23E-01 | 1.34E-01 | 6.49E-02 | **1.63E+00** | 2.28E-01 | 8.17E-01 | 1.51E-04 | 3.20E-01 |
| SD | 2.82E-01 | 1.77E-01 | 2.68E-01 | 1.71E-01 | 9.93E-02 | 2.29E+00 | 3.10E-01 | 4.07E-01 | 1.85E-04 | 1.20E-01 |
| Backbone | Mean | 6.29E-02 | 6.74E-01 | 4.73E-02 | 6.11E-02 | 2.37E-01 | 1.26E-01 | 9.58E-01 | 8.95E-01 | 6.39E-05 | 5.40E-01 |
| SD | 1.80E-02 | 9.15E-01 | 1.12E-02 | 2.55E-02 | 2.84E-01 | 5.72E-02 | 2.39E-01 | 3.76E-01 | 1.93E-05 | 2.11E-01 |
| Gill | Mean | 2.24E-01 | **1.30E+00** | 1.07E-01 | 2.86E-01 | 5.69E-01 | 4.01E-01 | **1.27E+00** | 7.05E-01 | 1.25E-04 | **1.80E+00** |
| SD | 1.30E-01 | 1.99E+00 | 3.44E-02 | 1.24E-01 | 7.77E-01 | 2.15E-01 | 4.49E-01 | 2.99E-01 | 3.89E-05 | 1.20E+00 |
| Stomach content | Mean | **1.38E+00** | **2.01E+00** | 4.42E-01 | **1.55E+00** | 8.18E-01 | **1.07E+00** | 6.54E-01 | 6.65E-01 | 4.59E-02 | **1.50E+00** |
| SD | 2.06E-01 | 1.44E+00 | 1.05E-01 | 8.02E-02 | 4.20E-01 | 1.01E-01 | 1.03E-01 | 1.53E-01 | 1.28E-02 | 6.43E-01 |