Supplementary Material

**Widespread dominance of methane ebullition over diffusion in freshwater aquaculture ponds**

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# Supplementary Figures and Tables

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## C:\Users\Renske\Pictures\Brazil 2019-2020\DSCN0044.JPGSupplementary Figures

**Supplementary Figure 1.** CH4 measurement equipment. Left: floating chamber connected with gastight tubing to a portable greenhouse gas analyzer (yellow box). Right: ebullition trap with a plastic bottle attached for buoyancy. The bottom is open, and glass bottle could be screwed on the white top after submersion to collect the bubbles.

## Supplementary Tables

**Table S1.** Characteristics of fishponds assessed in this study.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
| **Pond nr** | **Type** | **Species** | **Goal** | **Area (m2)** | **Depth (m)** | **Miscellaneous** |
| 1 | Excavated earthen | Tilapia, armored catfish | Breeding, research | 511.27 | 0.4 |  |
| 2 | Excavated earthen | Tilapia | Breeding, research | 744.74 | 0.2 |  |
| 3 | Excavated earthen | Grass carp, Tilapia, Astyanax | Breeding, research | 623.99 | 0.7 |  |
| 4 | Excavated earthen | Tilapia | Breeding, research | 357.53 | 0.5 |  |
| 5 | Excavated earthen | Tilapia | Breeding, research | 554.12 | 0.7 |  |
| 6 | Excavated earthen | Tilapia, Astyanax | Breeding, research | 600.85 | 0.4 |  |
| 7 | Excavated earthen | No fish | Breeding, research | 376.35 | 0.6 |  |
| 8 | Excavated earthen | Grass carp | Breeding, research | 621.12 | 0.2 |  |
| 9 | Excavated earthen | Tilapia | Breeding, research | 555.95 | 0.5 |  |
| 10 | Excavated earthen | Tilapia | Breeding, research | 580.98 | 0.4 |  |
| 11 | Excavated earthen | Tilapia | Breeding, research | 521.18 | 0.4 |  |
| 12 | Excavated earthen | Tilapia | Commercial | 459.62 | 0.5 |  |
| 13 | Excavated earthen | Tilapia | Commercial | 460.65 | 0.6 |  |
| 14 | Excavated earthen | Tilapia | Commercial | 331.55 | 0.4 |  |
| 15 | Excavated earthen | Tilapia | Commercial | 349.97 | 0.55 |  |
| 16 | Excavated earthen | Tilapia | Commercial | 699.6 | 0.5 |  |
| 17 | Excavated earthen | Tilapia | Commercial | 477.5 | 0.7 |  |
| 18 | Excavated earthen | Tilapia | Commercial | 320.8 | 0.55 |  |
| 19 | Natural | Tilapia | Commercial | 4470.56 | 0.55 |  |
| 20 | Natural | Tilapia | Commercial | 2658.22 | 0.6 |  |
| 21 | Natural | Tilapia, Astyanax, Pearl cichlid, Hoplias | Commercial | 984.59 | 0.6 | Tilapia in mesh cages, rest of fish wild in pond |
| 22 | Excavated earthen | Tilapia | Commercial | 466.65 | 0.8 |  |
| 23 | Excavated earthen | Tilapia | Recreation | 650.92 | 1.4 |  |
| 24 | Excavated earthen | Tilapia, Pacu, tambaqui |  | 1354.13 | 0.6 |  |
| 25 | Excavated earthen | Tilapia, Hoplias, Pacu, Leporinus macrocephalus, Oscar | Recreation | 1911.5 | 0.4 |  |
| 26 | Excavated earthen | Tilapia, Pacu, Spotted sorubim | Commercial | 2009.6 | 0.5 |  |
| 28 | Excavated earthen | Tilapia | Sustenance, recreation | 258.79 | 0.4 |  |
| 29 | Excavated earthen | Tilapia | Sustenance | 111.39 | 0.4 |  |
| 30 | Excavated earthen | Tilapia | Commercial, sustenance | 460.05 | 0.6 |  |
| 31 | Excavated earthen | Unknown |  | 224.88 | 0.4 |  |
| 32 | Excavated earthen | Unknown |  | 2775.54 | 0.25 |  |
| 33 | Natural | Tilapia, Wild species |  | 6378.49 | 1 | Tilapia in mesh cages, rest of fish wild in pond |
| 34 | Excavated earthen | Unknown |  | 4214.75 | 0.5 |  |
| 35 | Excavated earthen | Tilapia, Hoplias, Pearl cichlid, Astyanax |  | 82.79 | 0.25 |  |
| 36 | Excavated earthen | Tilapia, Hoplias, Pearl cichlid, Astyanax |  | 68.79 | 0.25 |  |
| 37 | Excavated earthen | Tilapia, Hoplias, Pearl cichlid, Astyanax |  | 107.74 | 0.2 |  |
| 38 | Excavated earthen | Tilapia, Hoplias, Pearl cichlid, Astyanax |  | 80.02 | 0.5 |  |
| 39 | Excavated earthen | Tilapia, Hoplias, Pearl cichlid, Astyanax |  | 310.64 | 0.2 |  |
| 40 | Excavated earthen | Tilapia, Hoplias, Pearl cichlid, Astyanax |  | 1807.9 | 0.45 |  |
| 41 | Excavated concrete | Tilapia, Dourado, Loricariidae, Astyanax | Commercial | 369.01 | 0.15 | Pond was drained during ebullition measurements |
| 42 | Natural | Unknown |  | 1587.94 | 0.5 |  |
| 43 | Excavated earthen | Unknown |  | 268.71 | 0.2 |  |
| 44 | Excavated earthen | Tilapia, Hoplias, Loricariidae, Pearl cichlid | Sustenance | 332.57 | 0.5 |  |
| 45 | Excavated earthen | Unknown | Breeding, research | 1142.2 | 1 |  |
| 46 | Excavated earthen | Tilapia | Breeding, research | 1024.47 | 0.6 |  |
| 47 | Excavated earthen | Tilapia | Breeding, research | 1041.25 | 0.35 |  |
| 48 | Excavated earthen | Unknown mix | Breeding, research | 1068.84 | 0.6 |  |
| 49 | Excavated earthen | Unknown | Breeding, research | 95.43 | 0.7 |  |
| 50 | Excavated earthen | Unknown | Breeding, research | 94.09 | 0.5 |  |
| 51 | Excavated earthen | Unknown | Breeding, research | 848.95 | 0.2 |  |
| 52 | Excavated earthen | Unknown | Breeding, research | 1034.94 | 0.2 |  |