Supplementary files
Figure S1. Increase of microalgae addition for water quality control: (a) pH value; (b) DO content. (Stocking densities in Aquaculture 1, 2 and 3 are 0.0050, 0.0025, and 0.0010 g/fish, respectively)
Figure S2. Evolutionary tree of dominant bacteria in samples collected from aquaculture systems

Table S1. Numerical values for the parameters of aquaculture (6-day culture)

| Fish/100 mL | COD (mg/L) | TN (T) | TAN (T) | DO content (mg/L) |
|-------------|------------|--------|---------|-------------------|
|             | T          | A      | T       | A                | T     | A    |
| 2           | ↑85        | ↑34    | ↑22.6   | ↑5.8             | ↑15.8 | ↑2.1 | ↑0.04 | ↑2.40 |
| 4           | ↑121       | ↑51    | ↑30.0   | ↑6.1             | ↑20.5 | ↑4.2 | ↓1.13 | ↑1.41 |
| 6           | ↑147       | ↑91    | ↑35.3   | ↑17.9           | ↑28.6 | ↑9.9 | ↓2.69 | ↑0.41 |
| 8           | ↑221       | ↑99    | ↑47.0   | ↑22.8           | ↑37.8 | ↑11.5| ↓4.80 | ↓1.06 |
| 10          | ↑342       | ↑109   | ↑68.1   | ↑26.0           | ↑45.8 | ↑13.8| ↓5.10 | ↓2.28 |

a “T” refers to the aquaculture added with traditional fish feed (Figure 1)
b “A” refers to the aquaculture added with algae (Figure 2)

Table S2. Number of sequences and OTU in samples

|                      | Number of sequences | Number of OTU |
|----------------------|---------------------|---------------|
| Sample 1             | 64125               | 354           |
| Sample 2             | 10680               | 325           |
| Total                | 74805               | 679           |

Figure S1
