

An investigation of airborne bioaerosols and endotoxins present in indoor traditional wet markets before and after operation in Taiwan: A case study

Supplementary Information

Table S1. Basic information about the two indoor TWMs investigated in this study.

Market	A	B
Age of the buildings investigated during this study (date)	26 (2008)	25 (2008)
Structural materials used for the Building's construction	Reinforced concrete with a ceramic-tile floor	Reinforced concrete with a ceramic-tile floor
Number of floors and operational area (m ²)	One, 2,097.08	One, 942.50
Number of vendors operating at the market	151	58
Occupancy area (m ² per vender)	16.25	13.88

Table S2. Average total bioaerosol concentration in the two indoor TWMs.

Market	Bioaerosols	Experimental Conditions in the TWMs	Average Concentration ¹ (CFU m ⁻³)
A	Bacteria	Before operations	2.71×10 ⁴
		After operations	9.68×10 ³
	Fungi	Before operations	8.63×10 ³
		After operations	2.09×10 ⁴
B	Bacteria	Before operations	1.06×10 ³
		After operations	7.34×10 ²
	Fungi	Before operations	2.33×10 ³
		After operations	1.86×10 ³

¹: based on the levels of all ten districts of selling goods in Table 1.

Table S3. A summary of airborne bioaerosol in two indoor TWMs compared in this study.

Market		A	B
The size of major BBs with the percentage of total BBs	Before operations	SPBs (78.15%)	LPBs (76.00%)
	After operations	SPBs (75.32%)	SPBs (72.55%)
Hotspots of BBs with the percentage of total BBs	Before operations	A-G (36.08%), A-H (23.34%), A-I (34.95%)	B-H (28.00%), B-A (25.00%), B-E (14.00%)
	After operations	A-G (24.74%), A-H (21.46%), A-I (29.61%)	B-E (23.11%), B-A (14.45%), B-D (14.45%)
Dominant bacterial community at the hotspot (Phylum/Genes)		<i>β-Proteobacteria</i> 34.75±4.50%/Most true <i>Pseudomonas</i> spp. 48.74±1.67%	<i>Firmicutes</i> 18.52±4.89%/ Most true <i>Pseudomonas</i> spp. 35.18±4.88 %
The size of major FBs with the percentage of total FBs	Before operations	SPBs (86.00%)	SPBs (81.82%)
	After operations	SPBs (63.23%)	SPBs (77.78%)
Hotspots of FBs with the percentage of total FBs	Before operations	A-G (16.46%), A-H (5.28%), A-I (64.99%)	B-C (10.91%), B-D (10.91%), B-F (12.73%), B-H (11.82%)
	After operations	A-G (18.36%), A-H (38.44%), A-I (32.52%)	B-E (13.10%), B-H (17.09%), B-I (10.82%), B-J (14.24%)
Impact factors on the bioaerosol distribution		slaughtering poultry, live poultry in cages, agitated waterspout of clean process, occupancy number, ventilation fans of ventilation system	continuing activity of customers after operation, chemical sanitization of clean process, air conditions of ventilation system

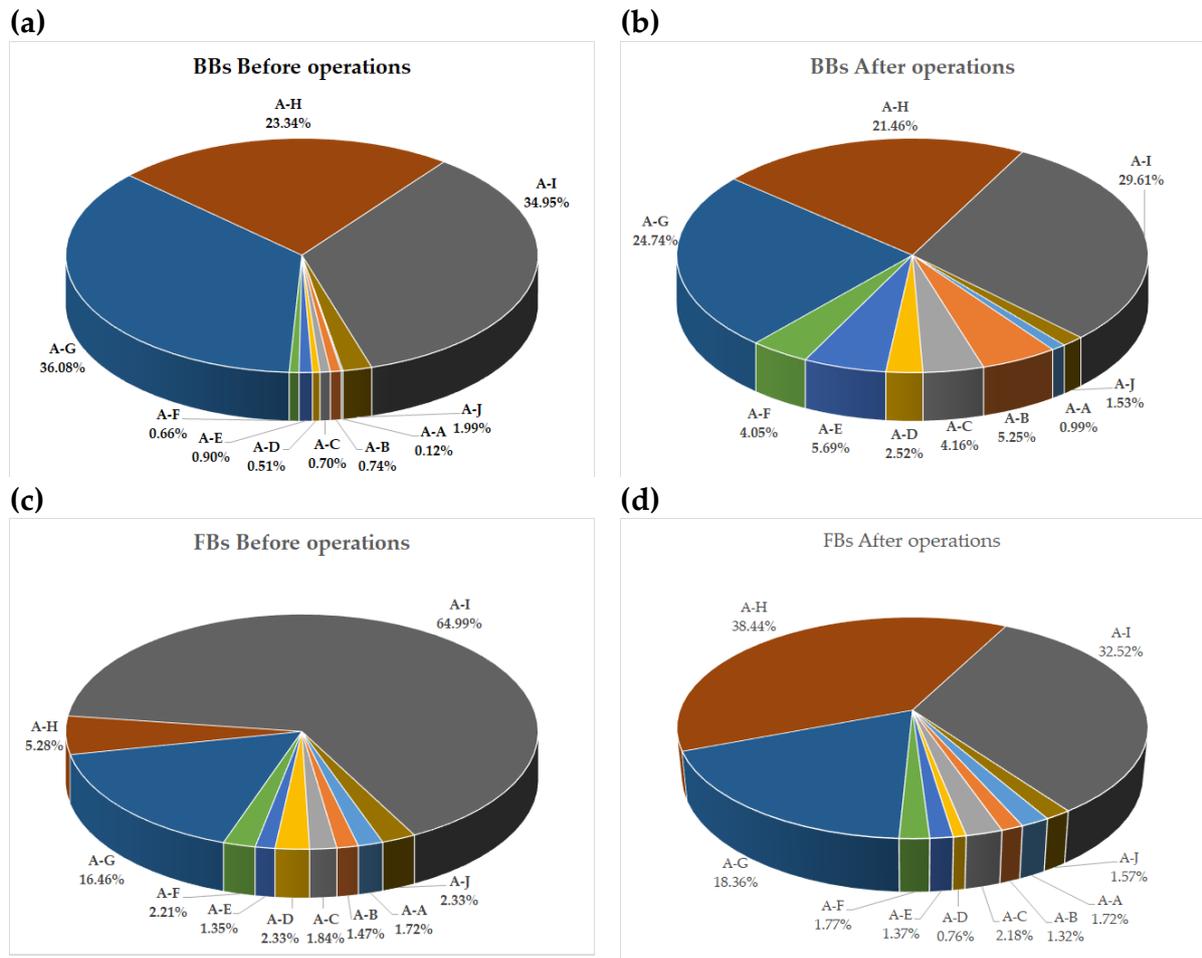
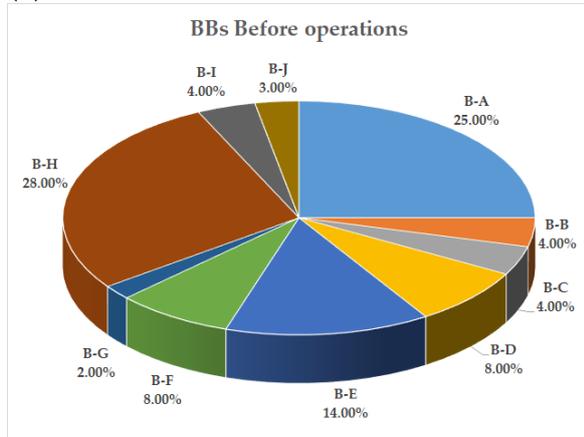
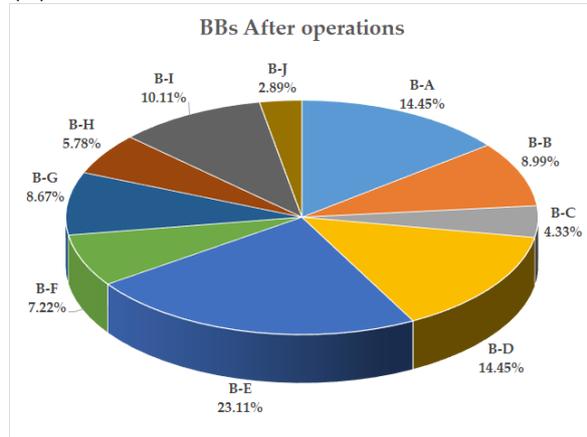


Figure. S1 The airborne-bioaerosol distribution in ten districts of indoor Market A: (a) BBs before operation; (b) BBs after operation; (c) FBs before operations; (d) FBs after operation.

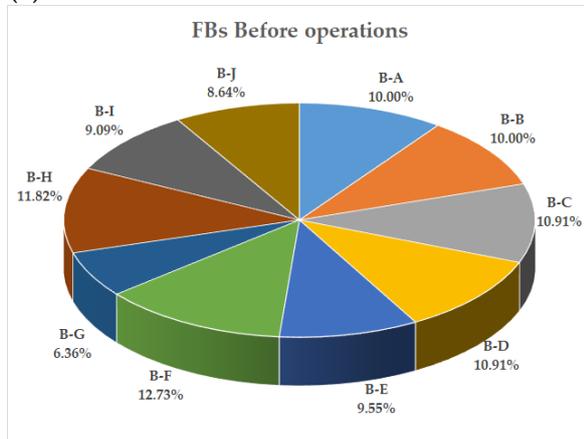
(a)



(b)



(c)



(d)

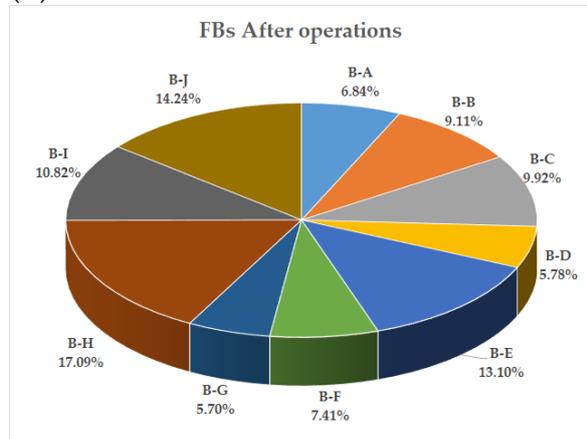


Figure. S2 The airborne-bioaerosol distribution in ten districts of indoor Market B: (a) BBs before operation; (b) BBs after operation; (c) FBs before operation; (d)FBs after operation.