

SUPPLEMENTARY MATERIALS



Fig. S1 Common ARGs in manure and soil samples collected from same pig farm.

Each Venn diagram represents the number of common and unique resistance genes in manure and soil samples collected from the certain pig farm.

Table S1 α -diversity index of microbiota in manure samples (mean $\pm$ SE)

Group	Simpson	Chao1	ACE	Shannon
SA	0.92 $\pm$ 0.04	422.80 $\pm$ 36.26	422.30 $\pm$ 36.17	5.20 $\pm$ 0.38
SB	0.81 $\pm$ 0.09	434.00 $\pm$ 24.39	432.60 $\pm$ 24.36	4.35 $\pm$ 0.55
SC	0.95 $\pm$ 0.02	474.56 $\pm$ 61.56	474.00 $\pm$ 61.57	5.86 $\pm$ 0.36
SD	0.88 $\pm$ 0.03	421.80 $\pm$ 44.07	420.80 $\pm$ 43.77	4.89 $\pm$ 0.40
SE	0.96 $\pm$ 0.01	513.50 $\pm$ 35.36	511.80 $\pm$ 34.92	5.92 $\pm$ 0.18

Table S2 α -diversity index of microbiota in soil samples (mean $\pm$ SE)

Group	Simpson	Chao1	ACE	Shannon
TA	0.98 $\pm$ 0.00	27165.06 $\pm$ 618.28	26889.58 $\pm$ 640.98	9.36 $\pm$ 0.21
TB	0.97 $\pm$ 0.00	27458.12 $\pm$ 399.25	27253.72 $\pm$ 420.29	8.86 $\pm$ 0.13
TC	0.99 $\pm$ 0.00	28426.31 $\pm$ 630.11	28191.76 $\pm$ 630.17	10.01 $\pm$ 0.27
TD	0.97 $\pm$ 0.00	27227.98 $\pm$ 521.03	26977.72 $\pm$ 502.37	9.03 $\pm$ 0.17
TE	0.98 $\pm$ 0.00	27651.47 $\pm$ 327.08	27407.86 $\pm$ 318.03	9.55 $\pm$ 0.36

Table S3 Details of information and operations about swine farms

Swine farm	Location	Operating time	Size of breeding area (hectare)	Breeding mode	Slaughtering amount per year	Ventilation mode	Cooling devices	Cold-proof devices
A	121.58°E, 31.69°N	2009-	20	Self-breeding and self-rearing	60000	Induced draft	Negative-pressure air fan; evaporative cooling pad; fans	Floor heating; air heater
B	121.22°E, 31.76°N	2014-	> 13.3	Self-breeding and self-rearing	40000	Induced draft	Evaporative cooling pad; fans	Hollow walls/adding insulation to the walls
C	121.81°E, 31.59°N	1996-	3.3-6.7	Self-breeding and self-rearing	> 30000	Induced draft	Negative-pressure air fan; evaporative cooling pad; fans	Hollow walls/adding insulation to the walls
D	121.37°E, 31.79°N	2002-	6.7-10	Self-breeding and self-rearing	20000	Natural draft	Evaporative cooling pad; fans	Hollow walls/adding insulation to the walls
E	121.41°E, 31.65°N	2012-	4	Self-breeding and self-rearing	45000	Induced draft	Negative-pressure air fan; evaporative cooling pad	Hollow walls/adding insulation to the walls; Erection of canopy and floor matting

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Swine farm	Fecal cleaning	Waste disposal	Environmental control devices	Feeding mode	Probiotics adding	Feeding density of fattening pigs (m2 per pig)
A	Mechanical	Land application	Sewage treatment: filter presses, Hybrid Anaerobic BaffLted Reactor(HABR), oxidation ponds; Manure treatment: organic fertilizer processing and treatment workshop ; Cleaning and disinfection: disinfection channel for workers and vehicles, pig house disinfection spray, disinfection washing machine	Commercial feed	None	1.2
B	Manual (blister dung)	Land application	Sewage and manure treatment, cleaning and disinfection are not detailed mentioned	Commercial feed	None	0.9
C	Mechanical	Composting; land application	Sewage treatment: aerobic and anaerobic treatment, mud presses, air floatation machines, mixers, lifting pumps, ultra-filtration and reverse osmosis, etc.; Manure treatment: solid-liquid separator, turning machine, loader, etc.; Cleaning and disinfection: high-pressure cleaning machine, disinfection machine, harmless treatment of dead pigs, special cold storage and equipment	Self-processed feed (fermented soybean meal as main ingredient)	Added (details not mentioned)	0.95
D	Manual	Land application	Sewage and manure treatment, cleaning and disinfection are not detailed mentioned	Commercial feed	None	0.9
E	Mechanical	Composting; land application	Sewage and manure treatment, cleaning and disinfection are not detailed mentioned	Commercial feed (corn, wheat, sorghum, soybean meal and bran)	Added (butyric acid)	1.3