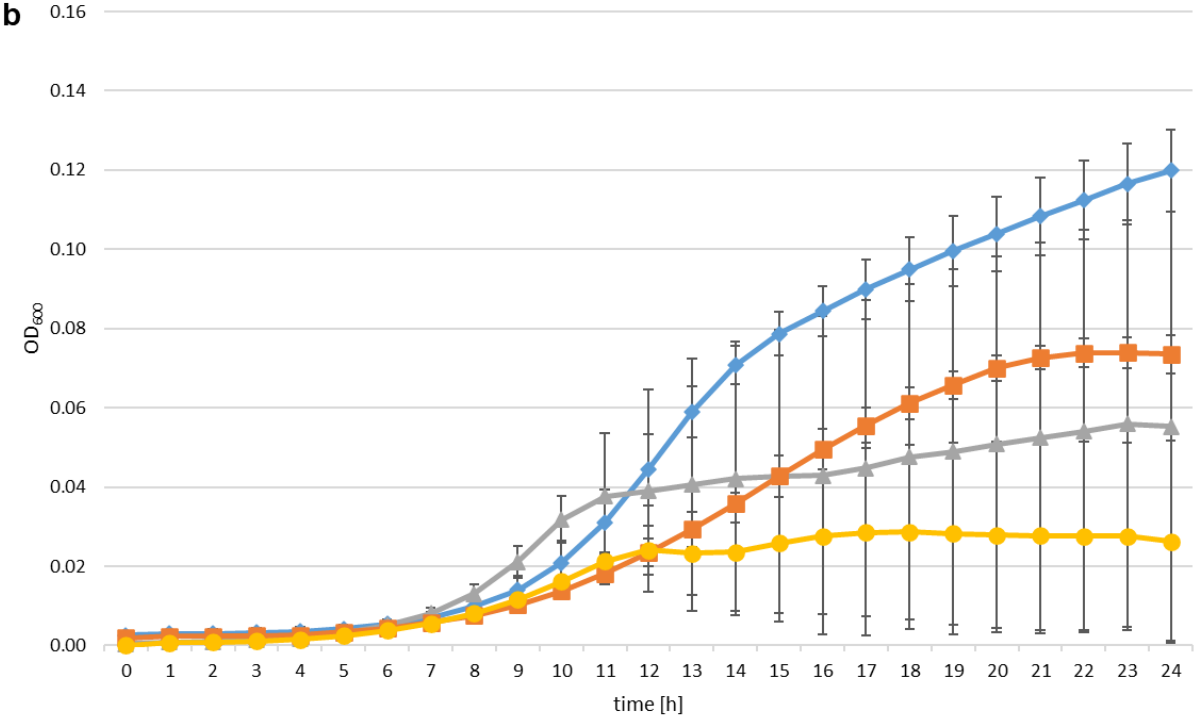
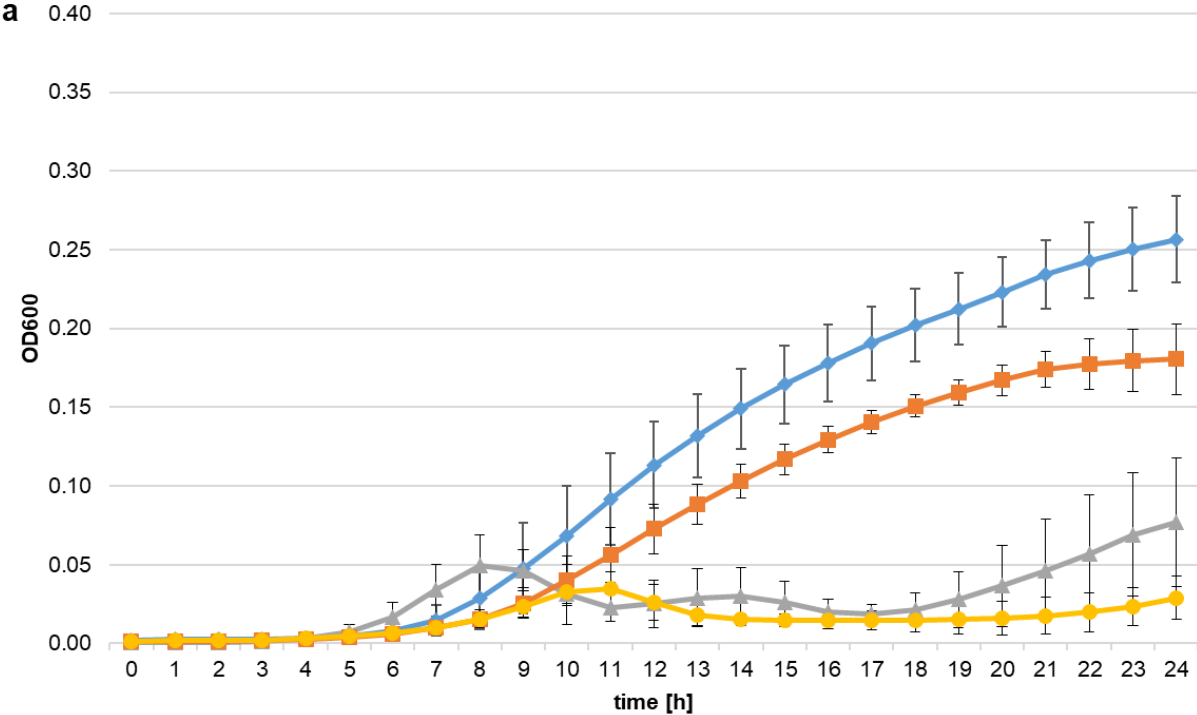


Supplementary Information



Supplementary Figure S1. Growth behavior of field isolates *C. coli* Cc7 (a) and *C. jejuni* Cj18 (b) in broth without added organic acids and phages (—◆—) and in broth supplemented with an organic acid blend (—■—) (benzoic acid, sorbic acid, propionic acid and acetic acid) and a phage mixture (—▲—) consisting of NCTC 12673 and phage vB_CcM-LmqcCPL1/1 (Multiplicity of infection (MOI) of 0.001 for Cj18, MOI of 0.01 for Cc7), and a combination of organic acid blend and phage mixture (—●—). Bacterial growth was monitored hourly by optical density (OD) absorbance measurements at 600 nm (OD₆₀₀) in a Tecan Spark[®] Plate Reader.

Supplementary Table 1. Study design of field trial design 1 with information on the stables, fattening period, breeding line, day of positive sampling, and biosecurity measures as well as vaccinations, feed additives, and medications.

Field trial design 1					
	Control group PAC	Experimental group (PAC) ^a	Control group A/P	Experimental group (P) ^b	Experimental group (A) ^c
Flock size before thinning before final slaughter	26,000 19,646	27,000 16,200	30,500 18,792	34,300 20,200	30,800 23,807
Fattening period (days)	42	42	42	42	42
Breed	Ross 308				
Positive PCR result for <i>Campylobacter</i> spp. ^d	26 dph	26 dph	30 dph	30 dph	30 dph
Biosecurity					
Building	separate	separate	separate	separate	separate
Change of boots	yes	yes	yes	yes	yes
Change of clothes	no	yes	no	yes	no
Vaccination ^e	IBDV, NDV, IBV				
Feed additives	Minerals, Vit. A, D ₃ , E				
Early antibiotic therapy	Lincomycin, Spectinomycin 1 dph - 3 dph				
Antibiotic therapy (additional)	Colistin sulfate 35 dph - 37 dph		Penicillin 30 dph - 32 dph	Penicillin 27 dph - 29 dph	

^aPAC = phages, organic acids, curcumin

^bP = phages

^cA = organic acids

^ddph = days post hatch

^eIBDV = infectious bursal disease virus, NDV = Newcastle disease virus, IBV = infectious bronchitis virus.

Supplementary Table 2. Study design of field trial design 2 with information on the stables, fattening period, breeding line, day of positive sampling, and biosecurity measures as well as vaccinations, feed additives, and medications.

Field trial design 2		
	Control group	Experimental group (C) ^a
Farm	1	1
Flock size (before thinning)	27,000	30,000
Fattening period (days)	41	41
Breed	Ross 308	
Positive PCR result for <i>Campylobacter</i> spp. ^b	25 dph	25 dph
Biosecurity		
Buildings of stables	different	different
Change of rubber boots	yes	yes
Change of clothes	no	no
Vaccination ^c	IBDV, NDV, IBV	
Feed additives	Minerals, Vit. A, D ₃ , E	
Early antibiotic therapy	Lincomycin, Spectinomycin 1 dph - 3 dph	

^aC = curcumin

^bdph = days post hatch

^cIBDV = infectious bursal disease virus, NDV = newcastle disease virus, IBV = infectious bronchitis virus.

Supplementary Table 3. Timeline of application of organic acid blend and phage mixture in field trial design 1 and associated sampling.

Field trial design 1								
Days post hatch	Control group PAC	Experimental group (PAC) ^a			Control group A/P	Experimental group (P) ^b	Experimental group (A) ^c	Sample collection ^d
25								
26								
27								
28								
29								
30								
31				A			A	FS
32				A			A	
33		P	C			P		FS, WS
34			C	A			A	FS, WS
35			C	A			A	CS
36			C	A			A	
37			C	A			A	
38			C	A			A	FS
39			C	A			A	
40		P	C			P		FS, WS
41			C					FS, WS
42								CS

^aPAC = phages, organic acids, curcumin

^bP = phages

^cA = organic acids

^dFS = fecal samples, CS = cecal samples, WS = water samples.

Supplementary Table 4. Timeline of curcumin application in field trial design 2 and associated sampling.

Field trial design 2			
Days post hatch	Control group	Experimental group (C) ^a	Sample collection ^b
25			
26			FS
27			
28			
29		C	FS
30		C	CS
31		C	
32		C	
33		C	FS
34		C	
35		C	
36		C	
37		C	FS
38		C	
39		C	
40		C	FS
41			CS

^aC = curcumin

^bFS = fecal samples, cs = cecal samples.