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Supplementary material

Appendix 1. Comparison of various reproductive parameters of nests between the two nesting site micro-habitats. Laying- and hatching dates, mean nestling mass, wing- and tarsus length were compared using general linear-mixed models, while clutch size and brood size (measured on day 1 and 12, day 0 = hatching day) were analysed using generalized linear-mixed models with Poisson error distribution. In all the models we entered study year as random factor. Laying- and hatching dates were box-cox transformed, while mean nestling mass, wing- and tarsus length were cube transformed prior the analyses to assure the normal distribution of model residuals.

	Farm animals (mean ± SE)		df	χ^2	P
	Absent	Present			
Laying date (Julian day; day 1 = 1 April)					
Breeding site micro-habitat	47.50 ± 3.14	41.88 ± 1.31	1	3.11	0.077
Year			1	0.00	1.000
Hatching date (Julian day; day 1 = 1 April)					
Breeding site micro-habitat	65.56 ± 3.13	60.61 ± 1.29	1	2.45	0.117
Year			1	0.00	1.000
Clutch size (no. eggs)					
Breeding site micro-habitat	4.56 ± 0.25	4.87 ± 0.07	1	0.26	0.604
Year			1	0.00	1.000
Brood size at day 1 (no. chicks)					
Breeding site micro-habitat	4.25 ± 0.29	4.27 ± 0.11	1	0.00	0.964
Year			1	0.00	1.000
Brood size at day 12 (no. chicks)					
Breeding site micro-habitat	4.00 ± 0.35	3.89 ± 0.13	1	0.03	0.844
Year			1	0.00	1.000
Nestling mass at day 12 (g)					
Breeding site micro-habitat	20.73 ± 0.92	21.57 ± 0.28	1	0.70	0.400
Year			1	0.00	1.000
Nestling wing length at day 12 (mm)					
Breeding site micro-habitat	55.99 ± 1.89	58.21 ± 0.56	1	1.89	0.168
Year			1	4.96	**0.030**
Nestling tarsus length at day 12 (mm)					
Breeding site micro-habitat	11.11 ± 0.11	11.17 ± 0.03	1	0.29	0.588
Year			1	1.11	0.300

Appendix 2. Structure of the general linear-mixed models used in data analysis. TCB – total cultivable bacteria, FDB – feather-degrading bacteria, MH – nesting site micro-habitat, H – hatching date, T – experimental treatment (brood size manipulation group), S – sex, SMI1 – scaled mass index on day 1, SMI2 – scaled mass index on day 13, SMP – first (on day 1) or second sampling (on day 13) event, Δ_{TCB} – change in TCB load, Δ_{FDB} – change in FDB load, Δ_{SMI} – change in scaled mass index, Y – study year, IndID – individual ID, NsiteID – nesting site ID, NestID – nest ID; day 0 = hatching day.

Model nr.	Response variable	Fixed effects	Random effects	Notes
1	TCB or FDB load	MH + H + SMI1 + MH×H + MH×SMI1	Y + IndID + Y:NsiteID	difference in bacterial loads between nesting micro-habitats in females on day 1
2	TCB or FDB load	MH + T + H + SMI2 + MH×T + MH×H + MH×SMI2 + T×H + T×SMI2	Y + IndID + Y:NsiteID	difference in bacterial loads between nesting micro-habitats and experimental groups in females on day 13
3	TCB or FDB load	MH + T + H + SMI2 + MH×T + MH×H + MH×SMI2 + T×H + T×SMI2	Y + IndID + Y:NsiteID	difference in bacterial loads between nesting micro-habitats and experimental groups in males on day 13
4	TCB or FDB load	S + MH + T + H + S×MH + S×T + S×H + MH×T + MH×H + T×H	Y + IndID + Y:NsiteID + Y:NestID	difference in bacterial loads between the sexes on day 13
5	TCB or FDB load	SMP + MH + T + H + SMP×MH + SMP×T + SMP×H + MH×T + MH×H + T×H	Y + IndID + Y:NsiteID	difference in bacterial loads between the two sampling events (day 1 and day 13) in females
6	Δ_{TCB} or Δ_{FDB} load	MH + T + H + Δ_{SMI} + MH×T + MH×H + MH×Δ_{SMI} + T×H + T×Δ_{SMI}	Y + IndID + Y:NsiteID	difference in the change in bacterial loads between nesting micro-habitats and experimental groups in females