

Supplementary material

Appendix 1

Table A1. Identity, range in abundance, mean abundance and standard deviation in abundance of fungi from feathers obtained from nests of barn swallows.

Fungal species			
Fungal species	Range	Mean	SD
<i>Aspergillus flavus</i>	1-17	7.31	0.81
<i>Absidia corymbifera</i>	2-29	12.16	1.04
<i>Mucor circinelloides</i>	2-14	7.25	0.55
<i>Aspergillus niger</i>	2-14	6.76	0.57
<i>Aspergillus fumigatus</i>	3-85	34.22	2.73
<i>Penicillium glabrum</i>	2-24	6.83	2.37
<i>Penicillium piceum</i>	8	8	0
<i>Thermomyces lanuginosus</i>	0-4	4	0
<i>Auxarthron umbrinum</i>	3-6	4.5	0.86
<i>Trichoderma reesei</i>	2-33	13.38	1.76
<i>Aspergillus terreus</i>	2-11	6.5	2.59
<i>Arachnomyces minimus</i>	3	3	0
<i>Aspergillus candidus</i>	2	2	0
<i>Myceliophthora thermophila</i>	2	2	0
<i>Aphanoascus fulvescens</i>	2	2	0

Table A2. Identity, range in abundance, mean abundance and standard deviation in abundance of bacteria from feathers in nests of barn swallows cultivated in TSA and FMA medium.

Bacterial species (TSA)			
Bacterial species	Range	Mean	SD
<i>Paenibacillus cookii</i>	1-23	8.36	1.51
<i>Bacillus licheniformis</i>	3-200	28.51	5.38
<i>Bacillus pumilus</i>	1-14	6.33	0.81
<i>Bacillus mycoides</i>	1-25	7.33	2.08
<i>Bacillus megaterium</i>	1-23	9.41	1.49
<i>Planococcus sp.</i>	1-40	10.41	4.95
<i>Staphylococcus Saprophyticus</i>	1-38	6.72	2.29
<i>Lysinibacillus fusiformis</i>	1-30	9.88	2.24
<i>Streptomyces violascens</i>	1-30	9.57	1.60
<i>Bacillus rhizosphaerae</i>	1-100	19.82	3.76

Bacterial species (FMA)

Bacterial species	Range	Mean	SD
<i>Streptomyces cinereorectus</i>	1-23	5.27	0.78
<i>Micromonospora aurantiaca</i>	1-4	1.71	0.20
<i>Rhodococcus sp.</i>	3	3	0
<i>Kocuria sp.</i>	1-20	5.36	1.23
<i>Bacillus amyloliquefaciens</i>	1-17	5.57	0.58
<i>Methylobacterium mesophilicum</i>	1-5	2.50	0.56
<i>Streptomyces thermoviolaceus</i>	1-23	7	0.91
<i>Staphylococcus lentus</i>	1-20	5.75	3.10
<i>Streptomyces cacaoi</i>	1-8	3.14	0.65
<i>Streptomyces griseoaurantiacus</i>	1-4	1.66	0.33

Table A3. Antibacterial activity of isolated fungi against standard bacterial strains measured as the width of the inhibition zones (mm) against standard bacterial strains. – means no inhibition zone.

Standard bacteria Isolated fungi	<i>Bacillus cereus</i>	<i>Staphylococcus aureus</i>	<i>Enterococcus faecalis</i>	<i>Eschericia coli</i> JM 83	<i>Enterobacter aerogenes</i>	<i>Enterobacter cloacae</i>	<i>Micrococcus luteus</i>	<i>Agrobacterium tumefaciens</i>
<i>Absidia corymbifera</i>	-	-	-	-	-	-	-	-
<i>Aphanoascus fulvescens</i>	-	-	-	-	-	-	-	-
<i>Arachnomyces minimus</i>	-	-	-	-	-	-	-	-
<i>Aspergillus candidus</i>	-	-	-	-	-	-	-	-
<i>Aspergillus flavus</i>	-	-	-	-	-	-	-	-
<i>Aspergillus fumigatus</i>	-	-	-	15	-	-	-	-
<i>Aspergillus niger</i>	-	15	8	2	-	-	-	15
<i>Aspergillus terreus</i>	16	27	9	26	14	16	31	17
<i>Auxarthron umbrinum</i>	15	21	12	2	16	13	29	19
<i>Mucor circinelloides</i>	-	-	-	-	-	-	-	-
<i>Myceliophthora thermophila</i>	-	-	-	-	-	-	-	-
<i>Penicillium glabrum</i>	6	-	7	16	-	-	15	-
<i>Penicillium piceum</i>	-	-	-	15	-	-	-	-
<i>Thermomyces lanuginosus</i>	15	33	12	32	14	13	28	16
<i>Trichoderma reesei</i>	13	23	10	22	13	12	3	17

Table A4a. Antibacterial activity of bacteria isolated from TSA medium measured as the width of the inhibition zone (mm) against standard bacterial strains. – means no inhibition zone.

Standard bacteria Isolated bacteria	<i>Bacillus cereus</i>	<i>Staphylococcus aureus</i>	<i>Enterococcus faecalis</i>	<i>Eschericia coli JM 83</i>	<i>Enterobacter aerogenes</i>	<i>Enterobacter cloacae</i>	<i>Micrococcus luteus</i>	<i>Agrobacterium tumefaciens</i>
<i>Paenibacillus cookii</i>	-	-	-	-	-	-	-	-
<i>Bacillus licheniformis</i>	6	16	-	-	-	-	-	-
<i>Bacillus pumilus</i>	-	10	16	-	-	-	4	-
<i>Bacillus mycoides</i>	-	-	-	-	-	-	-	-
<i>Bacillus megaterium</i>	-	-	-	-	-	-	-	-
<i>Planococcus sp.</i>	-	-	-	-	-	-	-	-
<i>Staphylococcus Ssaprophyticus</i>	-	-	-	-	-	-	-	-
<i>Lysinibacillus fusiformis</i>	-	-	-	-	-	-	-	-
<i>Streptomyces violascens</i>	-	-	-	-	-	-	-	-
<i>Bacillus rhizosphaerae</i>	-	17	-	-	-	-	16	-

Table A4b. Antibacterial activity of bacteria isolated from FMA medium measured as the width of the inhibition zone (mm) against standard bacterial strains. – means no inhibition zone.

Standard bacteria Isolated bacteria	<i>Bacillus cereus</i>	<i>Staphylococcus aureus</i>	<i>Enterococcus faecalis</i>	<i>Eschericia coli JM 83</i>	<i>Enterobacter aerogenes</i>	<i>Enterobacter cloacae</i>	<i>Micrococcus luteus</i>	<i>Agrobacterium tumefaciens</i>
<i>Staphylococcus lentus</i>	-	-	-	-	-	-	-	-
<i>Streptomyces cinereorectus</i>	-	-	-	-	-	-	-	-
<i>Micromonospora aurantiaca</i>	-	-	-	-	-	-	-	-
<i>Rhodococcus sp.</i>	-	-	-	-	-	-	-	-
<i>Kocuria sp.</i>	-	-	-	-	-	-	-	-
<i>Bacillus amyloliquefaciens</i>	10	2	-	-	-	-	2	6
<i>Methylobacterium mesophilicum</i>	-	-	-	-	-	-	-	-
<i>Streptomyces thermoviolaceus</i>	9	-	-	-	-	-	-	-
<i>Streptomyces cacaoi</i>	10	9	12	-	-	-	9	-
<i>Streptomyces griseoaurantiacus</i>	-	-	-	-	-	-	-	-

Figure A1a. Phylogenetic tree of bacterial species of 16s rRNA from feathers in nests of barn swallows.

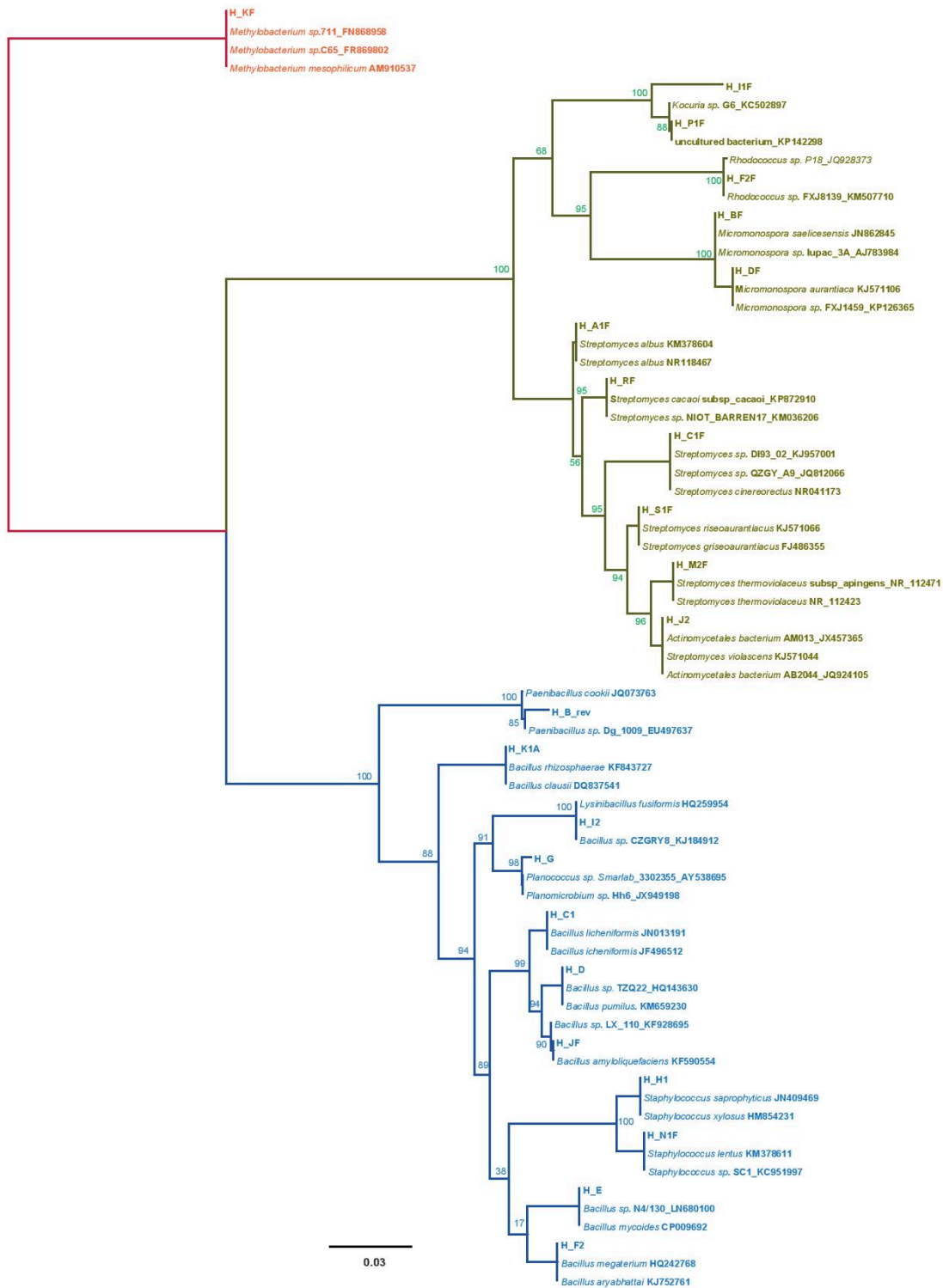


Figure A1b. Phylogenetic tree of fungal species of 18s rRNA from feathers in nests of barn swallows.

