

ELECTRONIC SUPPLEMENTARY INFORMATION

Comparison of Indoor Air Sampling and Dust Collection Methods for Fungal Exposure Assessment Using Quantitative PCR

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Table S1. Characteristics of the study homes

Home	Housing type	Number of occupants	Construction year	Floor area (ft ²)	Size of Room (ft ²)	Child's Room Flooring	Ventilation		Number of Pets		Moisture damage observations		
							Central Air days/week in summer	Heat Primary Furnace	Dogs	Cats	Visible damage (Frequency)	Visible Mold Location	Moldy Odor Location
1	Single Family	6	1865	1952	136	Carpet	1 to 3	Gas	3	3	Kitchen ^A		
2	Single Family	4	1976	2280	163	Carpet	7	Electric	1	3			
3	Single Family	5	2012	1011	141	Carpet	7	Gas	1	2			
4	Condominium	3	2011	1745	150	Carpet	7	Electric	1	1			
5	Apartment	4	1925	1728	170	Carpet	NA	Electric	2	2			Basement
6	Single Family	4	1923	1846	136	Carpet	4 to 6	Gas ^S	2	2	Basement ^O		
7	Condominium	4	1979	1772	111	Carpet	7	Electric	1	2			Laundry
8	Single Family	5	1932	1619	201	Carpet	4 to 6	Electric ^S	3	2		Other Bedroom	
9	Single Family	5	2004	704	143	Carpet	7	Electric	1	2			
10	Single Family	4	2010	2708	341	Carpet	7	Gas	2	2			
11	Condominium	5	1951	1458	59	Carpet	7	Gas	2	2	Kitchen ^A	Bathroom	
12	Single Family	4	1973	1021	103	Carpet	7	Gas	3	2			
13	Apartment	4	1921	1450	194	Hardwood	NA	Gas	2	2			
14	Single Family	3	1956	1120	110	Carpet	4 to 6	Gas ^S	2	1	Child's Bedroom & Basement ^F	Child's Bedroom & Basement	Basement

S - plus Space Heater; A – Always; F – Frequently; O – Often; NA – Not applicable

Table S2. Environmental Relative Moldiness Index (ERMI) Species

Group 1 Species	Group 2 Species
<i>Aspergillus flavus</i>	<i>Acremonium strictum</i>
<i>Aspergillus fumigatus</i>	<i>Alternaria alternata</i>
<i>Aspergillus niger</i>	<i>Aspergillus ustus</i>
<i>Aspergillus ochraceus</i>	<i>Cladosporium cladosporioides 1</i>
<i>Aspergillus penicillioides</i>	<i>Cladosporium cladosporioides 2</i>
<i>Aspergillus restrictus</i>	<i>Cladosporium herbarum</i>
<i>Aspergillus sclerotiorum</i>	<i>Epicoccum nigrum</i>
<i>Aspergillus sydowii</i>	<i>Mucor group</i>
<i>Aspergillus unguis</i>	<i>Penicillium chrysogenum</i>
<i>Aspergillus versicolor</i>	<i>Rhizopus stolonifer</i>
<i>Aureobasidium pullulans</i>	
<i>Chaetomium globosum</i>	
<i>Cladosporium sphaerospermum</i>	
<i>Eurotium amstelodami</i>	
<i>Paecilomyces variotii</i>	
<i>Penicillium brevicompactum</i>	
<i>Penicillium corylophilum</i>	
<i>Penicillium crustosum</i>	
<i>Penicillium purpurogenum</i>	
<i>Penicillium spinulosum</i>	
<i>Penicillium variabile</i>	
<i>Scopulariopsis brevicaulis</i>	
<i>Scopulariopsis chartarum</i>	
<i>Stachybotrys chartarum</i>	
<i>Trichoderma viride</i>	
<i>Wallemia sebi</i>	

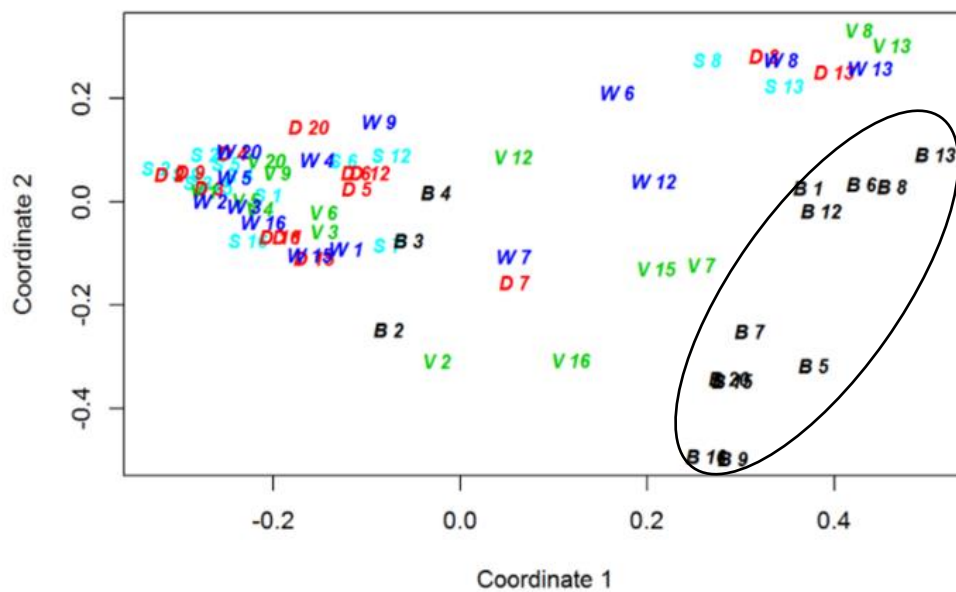


Figure S1. Multidimensional Scaling for all five tested methods. (Each data point represents one sample and is labelled S-Swiffer, D-Dutch, V-Vacuum, W-Wipe, or B-Button™)

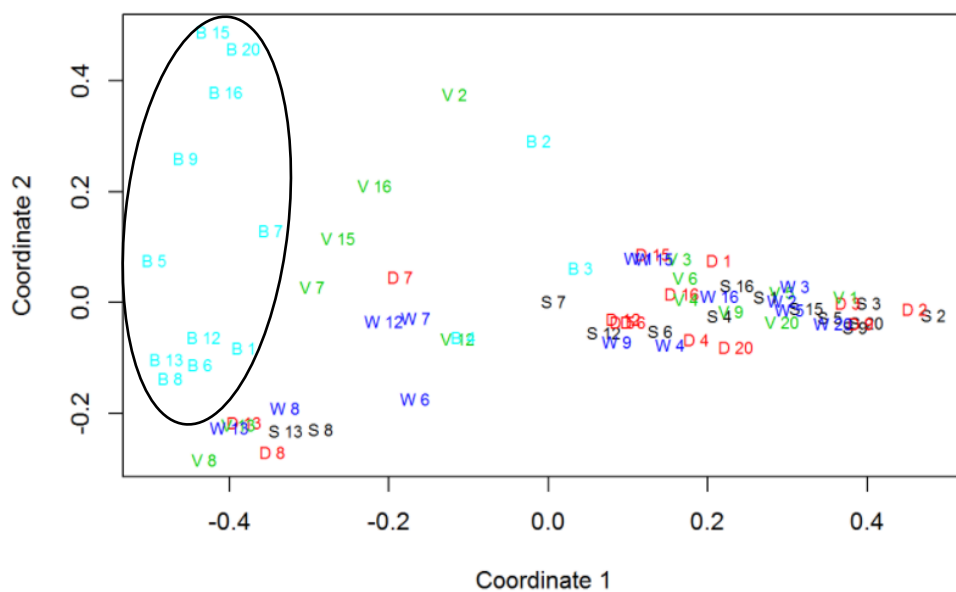


Figure S2. Principal Component Analysis (Each data point represents one sample and is labelled S-Swiffer, D-Dutch, V-Vacuum, W-Wipe, or B-Button™)

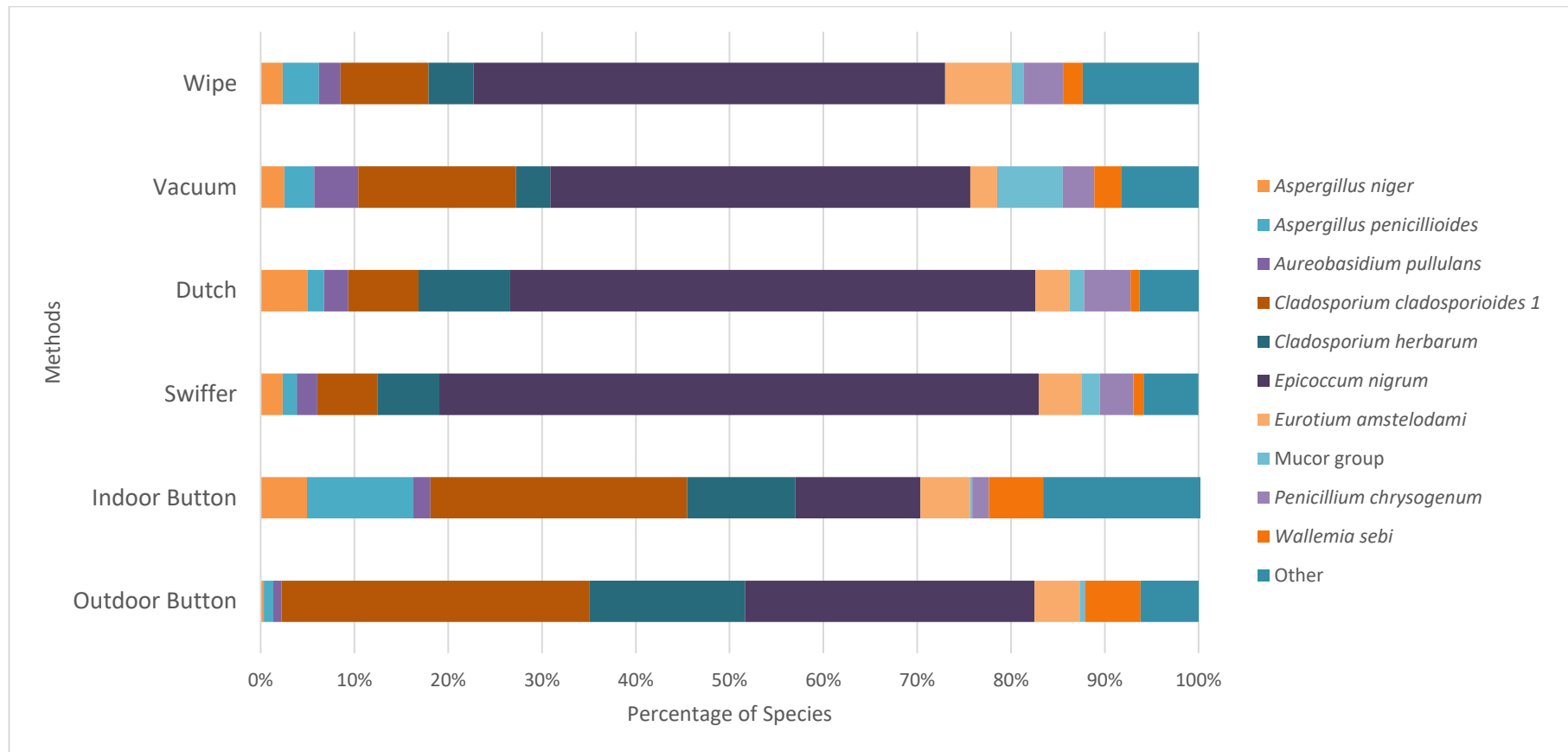


Figure S3. Average percentage of the ten most abundant species obtained with each method

Table S3. Median and range of concentrations^a for the ten most abundant species obtained with each sample type

Species	Method	Median (min - max)
<i>Aspergillus niger</i>	Swiffer	23 (1 - 2100)
	Dutch	15 (1 - 20000)
	Vacuum	3 (1 - 14000)
	Wipe	24 (1 - 3300)
	Button™	0.04 (0 - 22)
<i>Aspergillus penicillioides</i>	Swiffer	28 (3 - 350)
	Dutch	40 (3 - 510)
	Vacuum	30 (1 - 670)
	Wipe	46 (1 - 12000)
	Button™	1 (0 - 72)
<i>Aureobasidium pullulans</i>	Swiffer	93 (14 - 860)
	Dutch	125 (26 - 960)
	Vacuum	64 (18 - 10000)
	Wipe	91 (4 - 240)
	Button™	1 (0 - 19)
<i>Cladosporium cladosporioides</i> Type 1	Swiffer	315 (82 - 3800)
	Dutch	360 (59 - 3300)
	Vacuum	355 (61 - 12000)
	Wipe	360 (50 - 1800)
	Button™	5 (0.3 - 319)
<i>Cladosporium herbarum</i>	Swiffer	280 (19 - 1200)
	Dutch	285 (26 - 5800)
	Vacuum	63 (11 - 240)
	Wipe	106 (3 - 1000)
	Button™	2 (0 - 225)
<i>Epicoccum nigrum</i>	Swiffer	2500 (640 - 60000)
	Dutch	2550 (500 - 42000)
	Vacuum	1400 (45 - 62000)
	Wipe	1050 (140 - 36000)
	Button™	4 (0 - 246)
<i>Eurotium amstelodami</i>	Swiffer	52 (6 - 2900)
	Dutch	80 (7-5500)
	Vacuum	50 (1 - 4300)
	Wipe	45 (1 - 2600)
	Button™	1 (0 - 81)

^aSwiffer, Dutch, vacuum and wipe dust results are in cells/mg and Button™ air results are in cells/m³

Table S3. Continued^a

Species	Method	Median (min - max)
<i>Mucor</i> group	Swiffer	16 (1 - 1400)
	Dutch	15 (0 - 690)
	Vacuum	10 (0 - 15000)
	Wipe	16 (0 - 420)
	Button™	1 (0 - 3)
<i>Penicillium chrysogenum</i>	Swiffer	35 (1 - 4800)
	Dutch	62 (8-4400)
	Vacuum	23 (1 - 8900)
	Wipe	23 (4 - 1700)
	Button™	0.2 (0 - 22)
<i>Wallemia sebi</i>	Swiffer	34 (7-320)
	Dutch	57 (3 - 540)
	Vacuum	64 (0 - 3000)
	Wipe	78 (0 - 1800)
	Button™	1 (0 - 87)
Other 26 species combined	Swiffer	4 (0 - 3300)
	Dutch	7 (0-2700)
	Vacuum	5 (0-18000)
	Wipe	5 (0 - 29)
	Button™	0.4 (0 - 37)

^aSwiffer, Dutch, vacuum and wipe dust results are in cells/mg and Button™ air results are in cells/m³

Table S4. Temperature and humidity readings for passive collection dust samples

Home	Start for Passive Collection	Stop for Passive Collection	Temperature (°C) Average (Range)	Relative Humidity (%) Average (Range)
1	11/4/2015 16:40	12/3/2015 16:21	20.2 (16 - 24)	42.2 (23 - 64)
2	1/14/2016 16:32	2/11/2016 15:06	18.8 (17 - 21)	38.9 (29 - 55)
3	11/11/2015 15:58	12/9/2015 15:35	20.9 (17 - 27)	49.4 (27 - 75)
4	1/27/2016 18:14	2/26/2016 17:18	21.4 (19 - 26)	41.3 (26 - 50)
5	4/22/2016 16:15	5/20/2016 12:11	23.1 (19 -28)	51.2 (29 - 98)
6	3/16/2016 16:45	4/17/2016 16:20	24.9 (22 - 28)	28.3 (15 - 47)
7	2/11/2016 16:16	3/10/2016 17:17	18.8 (16 - 22)	39.8 (24 - 62)
8	5/6/2016 10:12	6/11/2016 10:02	23.4 (19 - 31)	51.2 (35 - 64)
9	6/22/2016 17:43	7/20/2016 18:00	29.2 (24 - 36)	41.7 (31 - 56)
10	6/9/2016 15:07	7/9/2016 11:10	22.6 (18 - 26)	54.4 (42 - 80)
11	7/22/2016 14:37	8/18/2016 16:19	24.0 (22 - 26)	55.3 (48 - 64)
12	12/12/2015 12:20	1/9/2016 12:20	27.5 (24 - 32)	28.4 (15 - 55)
13	10/9/2015 16:10	11/6/2015 16:40	21.9 (18 - 26)	64.4 (45 - 78)
14	7/15/2016 18:32	8/10/2016 18:41	29.6 (27 - 34)	45.3 (35 - 62)