



Application Note

The monitoring of airborne falling microorganisms using MC-Media Pad

MC-Media Pad, ready-to-use dry medium, can be applied to monitoring of airborne falling microorganisms according to Japanese sanitation law regarding making lunch and delicatessens since it has unique sheet construction of the medium. In case of this, after standing for a limited time under the opening cover film, MC-Media Pad should be added 1 mL of sterilized diluent (e.g. phosphate buffered saline) and cultured according to instruction.

The evaluation of monitoring for airborne falling microorganisms using MC-Media Pad is described in this application note.

How to evaluation

The comparison was conducted according to Japanese sanitation law for the lunches/delicatessens manufacturing facility.

The comparison of monitoring falling bacteria

MC-Media Pad ACplus (for total viable count) and Standard plate agar were stood adjacently for 5 min. under opening cover film condition in 50 places. Then, MC-Media Pad was inoculated sterile phosphate buffered saline. After incubation for 48h at 35°C, grown colonies on both media were counted.

The comparison of monitoring falling fungi

MC-Media Pad YM and Potato dextrose agar with chloramphenicol (CP-PDA) were stood adjacently for 20 min. under opening cover film condition in 50 places. Then, MC-Media Pad was inoculated sterile phosphate buffered saline and incubated for 72h at 23°C. CP-PDA was incubated for 7 days at 23°C. After incubation, grown colonies on both media were counted.

One way analysis of variance was performed for determining differences between both methods at significance level of $P=0.05$.

Results

The evaluation for monitoring of airborne falling microorganisms using MC-Media Pad was conducted in 50 places. As shown in below table, both S MC-Media Pad ACplus and Standard plate agar could detect from all 50 places. The means \pm standard deviation (SD) of aerobic count obtained from MC-Media Pad ACplus and Standard plate agar were 2.5 ± 1.8 cfu/plate and 2.4 ± 1.6 cfu/plate, respectively. For yeasts and molds, MC-Media Pad YM and CP-PDA could detect from 45 and 44 places, respectively. The means \pm SD of yeasts and molds count obtained from MC-Media Pad YM and CP-PDA were 2.2 ± 2.3 cfu/plate and 2.4 ± 2.6 cfu/plate, respectively. There is no significant difference between MC-Media Pad ACplus and Standard plate count, and MC-Media Pad YM and CP-PDA, respectively.

These results demonstrated that MC-Media Pad methods, easy and ready-to-use dry media, are a useful alternative for the monitoring of airborne falling microorganisms.

Table : Comparison of detection for airborne falling microorganisms

For viable count	No. of samples	No. of positive samples	Mean	Standard deviation
MC-Media Pad ACplus	50	50	2.5	1.8
Standard plate agar	50	50	2.4	1.6

p value (one-way analysis of variance) = $0.86 > 0.05$

There is no significant difference between MC-Media Pad ACplus and Standard plate agar.

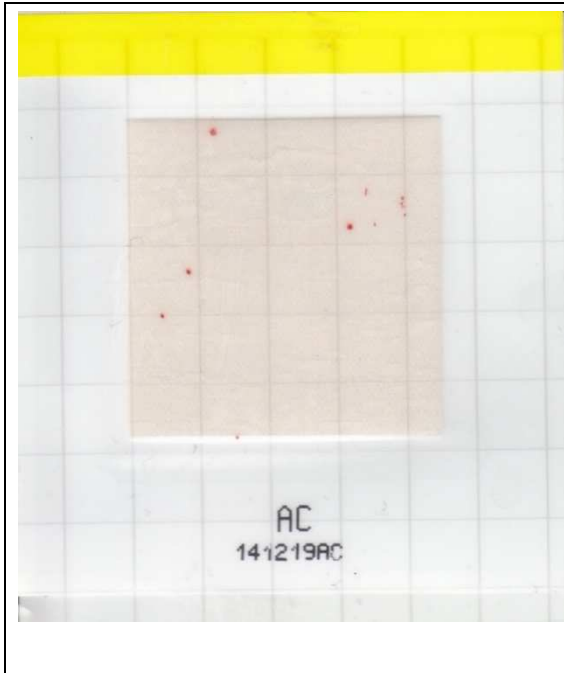
For yeasts and molds count	No. of samples	No. of positive samples	Mean	Standard deviation
MC-Media Pad YM	50	45	2.2	2.3
CP-PDA	50	44	2.4	2.6

p value (one-way analysis of variance) = $0.66 > 0.05$

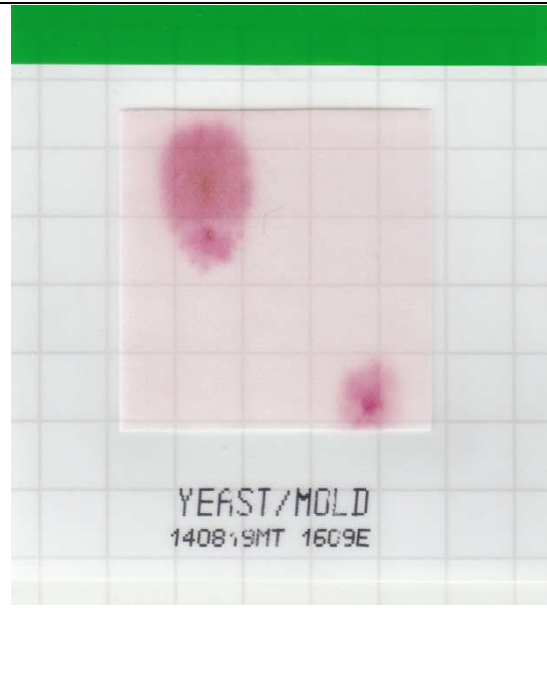
There is no significant difference between MC-Media Pad YM and CP-PDA.

Pictures : Colonies on MC-Media Pad AC plus and YM after airborne falling microorganisms test

MC-Media Pad ACplus



MC-Media Pad YM



MC-Media Pad ACplus

Sample place	cfu/plate	
	MC-Media Pad ACplus	SPC
1	3	1
2	3	2
3	1	1
4	2	1
5	4	3
6	1	1
7	3	3
8	2	1
9	5	1
10	1	1
11	4	1
12	6	2
13	2	3
14	1	2
15	2	5
16	6	3
17	4	6
18	2	2
19	2	2
20	2	1
21	1	2
22	1	1
23	10	2
24	3	1
25	1	1
26	3	5
27	4	4
28	1	5
29	2	2
30	2	3
31	3	6
32	1	1
33	1	1
34	1	3
35	3	2
36	1	3
37	2	1
38	5	8
39	1	5
40	5	4
41	1	2
42	3	2
43	1	2
44	2	2
45	4	1
46	1	2
47	2	1
48	1	1
49	1	4
50	2	3
mean	2.5	2.4
S.D.	1.8	1.6

MC-Media Pad YM

Sample place	cfu/plate	
	MC-Media Pad YM	CP-PDA
1	1	2
2	4	6
3	2	5
4	1	3
5	3	3
6	1	0
7	1	0
8	4	7
9	1	0
10	1	0
11	1	3
12	4	7
13	2	1
14	1	2
15	2	2
16	1	1
17	2	1
18	1	1
19	3	7
20	2	1
21	2	1
22	0	2
23	2	2
24	0	1
25	14	11
26	0	1
27	2	2
28	2	2
29	1	2
30	7	13
31	7	0
32	4	3
33	2	4
34	3	4
35	3	3
36	4	1
37	2	1
38	2	1
39	1	1
40	1	3
41	3	1
42	4	2
43	1	1
44	0	1
45	1	0
46	1	2
47	0	1
48	0	1
49	1	1
50	2	1
mean	2.2	2.4
S.D.	2.3	2.6