

Jaap van der Burg

Friendly bacteria



1

Fungal and mold problems



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2

IPM or not?



3

Biological



4



Floors,  
walls,  
objects,  
archives



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5

Often combined



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6

A big issue,  
Not enough staff, funds,.. to fight

But not unique to heritage



7

Office cleaning



8

## Friendly bacteria



9

Bacteria that eat microbiological dust PM<sub>2,5</sub>  
and PM<sub>10</sub>, spores, allergens,  
carbonhydrogens, ....

And reduce the frequency for cleaning



10

### Tested and reported to reduce:

Issue	effect
Organic odors	- 100%
VOC's	- 50%
PM 2,5	- 50%
PM 10	- 35%
PAH's	- 100%
High dust particles	- 65%



11

### Emperical tests on

19<sup>th</sup> century paper  
 Gelatine photo  
 Drawings with:  
 - Ashes  
 - Charcoal  
 - Chalc  
 Plaster  
 Patina on objects

No physical (microscopic) changes



12

So started to use it in storages



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13

And did some tests

Air samples in storage in use before, use of bacteria

Air samples	yeast	fungal	Xerolite fungal
Extraction	<5	90	75
Manipulation book	<5	70	75
Manipulation box	<5	50	40

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14

And did some tests

Air samples in storage in use, after use of bacteria

Air samples	yeast	fungal	Xerolite fungal
Extraction	200	< 5	< 5
Manipulation book	260	< 5	< 5
Manipulation box	70	5	5

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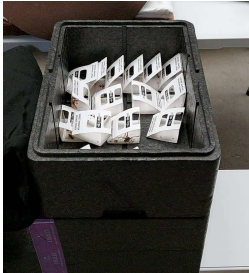
15



16



## Side effect ??



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17

## Notaceable reduction in

## Unlucky insects

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18

## Theoretical explanation

Dust is attractive for insects:

- Dust lice
- Zygmantoma



19

A Fact??

Do not know yet

Starting up a study  
(gathering structured  
data) now



20

**A Fact??**

**Open to suggestions  
and ideas**

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