

**MICROBIOCIDAL ACTIVITY OF GERMBUSTER STERILRAY UV WAND PRODUCT  
VS. BACILLUS ATROPHAEUS SPORE SUSPENSION ATCC 9372**

**Tested for:** Far-UV Sterilray  
30 Centre Road  
Suite 5  
Somersworth, NH 03878

**Product:** Germbuster Sterilray UV Wand

**Method:** Percent Bacterial Reduction

**Investigator:** James J Barbato  
Microbiology Research Associates, Inc.  
33 Nagog Park  
Acton, MA 01720

**Project #:** HEI-002                      **Report #:** HEI002-002

**Notebook Reference:** Book 95, Page 151-152

**Test Organisms:**

1. *Bacillus atrophaeus* Spore Suspension                      ATCC #9372

**Method and Procedure:**                      Method: Study #HEI-002

**Conclusions:**

1. The Germbuster Sterilray UV Wand product killed 99.93% of viable *Bacillus atrophaeus* spores in 15 seconds of exposure to 51.5 mj/cm<sup>2</sup> of UV exposure.
2. The Germbuster Sterilray UV Wand product killed 99.64% of viable *Bacillus atrophaeus* spores in 9 seconds of exposure to 35.6 mj/cm<sup>2</sup> of UV exposure.

3. The Gербuster Sterilray UV Wand product killed 97.63% of viable *Bacillus atrophaeus* spores in 6 seconds of exposure to 21 mj/cm<sup>2</sup> of UV exposure.
4. The Gербuster Sterilray UV Wand product killed 60.45% of viable *Bacillus atrophaeus* spores in 3 seconds of exposure to 5.9 mj/cm<sup>2</sup> of UV exposure.
5. The Gербuster Sterilray UV Wand product demonstrated potent sporicidal activity against *Bacillus atrophaeus* spores.

**Results:**

**Table I**

**Percent Bacterial Reduction of  
Gербuster Sterilray UV Wand  
vs. *Bacillus atrophaeus* Spore Suspension**

<b>Exposure Time (Sec)</b>	<b>Test Organisms</b>	<b>Time 0 Count/ml</b>	<b>UV Intensity mj/cm<sup>2</sup></b>	<b>CFU/ml After Exposure</b>	<b>% Reduction</b>
15	<i>B. atrophaeus</i>	1.10x10 <sup>6</sup>	51.5	7.4x10 <sup>2</sup>	99.93
9	<i>B. atrophaeus</i>	1.10x10 <sup>6</sup>	35.6	4.0x10 <sup>3</sup>	99.64
6	<i>B. atrophaeus</i>	1.10x10 <sup>6</sup>	21	2.9x10 <sup>4</sup>	97.36
3	<i>B. atrophaeus</i>	1.10x10 <sup>6</sup>	5.9	4.35x10 <sup>5</sup>	60.45

12-22-04

Date

  
James J. Barbato, M.S., M.P.H.  
President

**NOTE: This test was conducted with a special low-power Far-UV Sterilray™ lamp in order to control the amount of exposure. The lamp is 1/30 the power that will be used in Version 3.0 This would result in an exposure of less than 2 seconds to achieve 60 mj/cm<sup>2</sup>.**

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**Tested for:** Far-UV Sterilray  
30 Centre Road  
Suite 5  
Somersworth, NH 03878

**Product:** Gerbuster Sterilray UV Wand

**Method:** Percent Bacterial Reduction

**Investigator:** James J Barbato  
Microbiology Research Associates, Inc.  
33 Nagog Park  
Acton, MA 01720

**Project #:** HEI-003                      **Report #:** HEI003-003

**Notebook Reference:** Book 96, Page 2-4

**Test Organism:**

1. *Bacillus atrophaeus* Spore Suspension                      ATCC #9372

**Method and Procedure:**                      Method: Study #HEI-003

**Conclusions:**

1. The Gerbuster Sterilray UV Wand product killed >99.99% of *Bacillus atrophaeus* spores in 20 seconds of exposure to 80 mj/cm of UV exposure.
2. The Gerbuster Sterilray UV Wand product killed 99.77% of *Bacillus atrophaeus* spores dried on a glass slide in 12 seconds of exposure to 50mj/cm of UV exposure and 99.93% of *Bacillus atrophaeus* spores dried on a glass slide in 24 seconds of exposure to 100 mj/cm<sup>2</sup> of UV exposure.

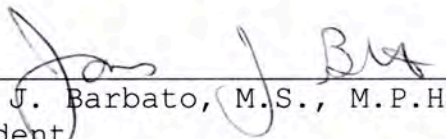
**Results:**

**Table I**  
**Percent Bacterial Reduction of**  
**Gerbuster Sterilray UV Wand**  
**vs. *Bacillus atrophaeus* Spore Suspension**

Exposure Time (Sec)	Test Organisms	Time 0 Count/ml	UV Intensity mj/cm <sup>2</sup>	CFU/ml After Exposure	% Reduction
*10/10	<i>B. atrophaeus</i> (wet)	2.0x10 <sup>6</sup>	*80/cm <sup>2</sup>	1.3x10 <sup>2</sup>	>99.99
12	<i>B. atrophaeus</i> (dry slide)	8.7x10 <sup>5</sup>	50/cm <sup>2</sup>	2.0x10 <sup>3</sup>	99.77
24	<i>B. atrophaeus</i> (dry slide)	8.7x10 <sup>5</sup>	100/cm <sup>2</sup>	6.2x10 <sup>2</sup>	99.93

\*Exposed to 40 mj, mixed and exposed to another 40 mj.

1-03-07  
Date

  
James J. Barbato, M.S., M.P.H.  
President

**NOTE: This test was conducted with a special low-power Far-UV Sterilray™ lamp in order to control the amount of exposure. The lamp is 1/30 the power that will be used in Version 3.0 This would result in an exposure of less than 3 seconds to achieve 100 mj/cm<sup>2</sup>.**

**MICROBIOCIDAL ACTIVITY OF GERMBUSTER STERILRAY UV WAND PRODUCT  
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**Tested for:** Far-UV Sterilray  
30 Centre Road  
Suite 5  
Somersworth, NH 03878

**Product:** Germbuster Sterilray UV Wand

**Method:** Percent Bacterial Reduction

**Investigator:** James J Barbato  
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**Project #:** HEI-004                      **Report #:** HEI004-008

**Notebook Reference:** Book 96, Page 81-83

**Test Organism:**

1. *Bacillus atrophaeus* Spore Suspension                      ATCC #9372

**Method and Procedure:**                      Method: Study #HEI-003

**Conclusions:**

1. The Germbuster Sterilray UV Wand product killed >99.99% of *Bacillus atrophaeus* spores dried on a glass slide in 25 seconds of exposure to 100mj/cm of UV exposure.

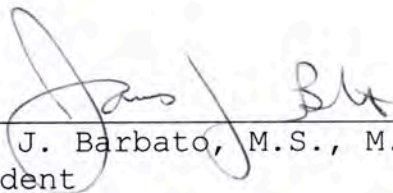
**Results:**

**Table I**

**Percent Bacterial Reduction of  
Gerbuster Sterilray UV Wand  
vs. *Bacillus aatrophaeus* Spore Suspension**

<b>Exposure Time (Sec)</b>	<b>Test Organisms</b>	<b>Time 0 Count/ml</b>	<b>UV Intensity mj/cm<sup>2</sup></b>	<b>CFU/ml After Exposure</b>	<b>% Reduction</b>
25	<i>B. atropaeus</i> (dry slide)	1.72x10 <sup>4</sup>	100.6/cm <sup>2</sup>	1.0x10 <sup>0</sup>	>99.99

1/15/07  
Date

  
James J. Barbato, M.S., M.P.H.  
President

**NOTE: This test was conducted with a special low-power Far-UV Sterilray™ lamp in order to control the amount of exposure. The lamp is 1/30 the power that will be used in Version 3.0 This would result in an exposure of less than 3 seconds to achieve 100 mj/cm<sup>2</sup>.**