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LABORATUVARI



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Laboratory Test Results:

Path-Away® Anti-Pathogenic Solution

2.5% Concentration

Provided by:

Global Infection Control Consultants, LLC

Bluffton, SC 29910

USA

Tel: 1-843-705-3956

www.path-away.com

12 March 2012

Erduran Medical Lab is an established business providing medical, chemical and limited food tests in north Cyprus. Approximately 17,000 clients depend on Erduran Lab for a variety of lab services, including working permissions, food tests and medical tests.

A 2.5% concentration sample of Path-Away® Anti-Pathogenic Solution was submitted to Erduran Medical Laboratory for testing in various matrixes to determine the efficacy against bacteria, yeasts and fungus. The section of the laboratory where urine analysis is conducted was chosen as the test site due to the proliferation of bacteria there during a normal work day.

Path-Away® Anti Pathogenic Solution is a broad spectrum anti-pathogenic solution derived from natural sources with no added chemicals, drugs or alcohol. It is synthesized from all naturally occurring substances. It is an extremely potent and effective anti-pathogen that acts as a bactericide, fungicide, anti-viral and anti-parasitic compound. Path-Away® Anti Pathogenic Solution is environmentally safe with extremely low toxicity to humans, plants, animals and the environment.

Path-Away® Anti Pathogenic Solution extract is a powerful anti-microbial that is presently the natural prophylactic with the broadest spectrum action against diseases that attack humans, animals and plants. It can be utilized as a safe and friendly disinfectant on hard and porous surfaces as well as in the air you breathe.

Path-Away® Anti Pathogenic Solution is biodegradable according to the “Standard Test Methods for Determining the Anaerobic Biodegradation Potential of Organic Chemicals”, ASTM Standards, Section 11, Water and Environmental Technology, Procedure E 1196-2, pp. 879-901, 1993 even though it contains no added chemicals.

Laboratory studies have indicated that the anti-pathogenic mechanism of efficacy for Path-Away® Anti Pathogenic Solution takes place in the cytoplasmic membrane where the uptake of amino acids is prevented and disorganization of the cytoplasmic membrane and leakage of low molecular weight cellular contents takes place thus destroying the pathogenicity of the cell thereby rendering it harmless. There is evidence that it also interrupts cellular respiration.

All laboratory testing was conducted with modern scientific equipment and to standards such as ISO 4832-1991. Laboratory personnel are highly trained in modern microbiological methodology.

The following reports are the results of these tests.

Date: 2/20/2012

OPTATIVE ANALYSIS REPORT

Report No : 8917

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **2/14/2012 - 20/02/2012**
Sample's
Type : **AIR SAMPLE**
Arrival Date to Laboratory : **2/14/2012**

<u>Place of Sampling</u>	<u>Analysis Performed</u>	<u>Measured Value</u>	<u>Method of Analysis</u>
Outside of the laboratory	Total Bacteria	525 cfu/1000L	Biomérieux Air Ideal

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

2)The results could be interpreted from the table below

Total Bacteria count in air	Quality class	Interpretation
Below 100 cfu/1000L	A	Perfect
Between 100 - 300 cfu/1000L	B	Moderate - Acceptable
More than 300 cfu/1000L	C	Bad - Non acceptable

Ref. -"Clean air solutions in food processing" Gun Wirtanen, Hanna Miettinen, Satu Pahkala,Setto Enbom, Liisa Vanne, VTT Publications 482, ESPOO 2002, sayfa 64

Analysis performed by

Sidika Can

Food Engineer

Date: 2/20/2012

OPTATIVE ANALYSIS REPORT

Report No : 8917

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **2/14/2012 - 20/02/2012**
Sample's
Type : **AIR SAMPLE**
Arrival Date to Laboratory : **2/14/2012**

<u>Place of Sampling</u>	<u>Analysis Performed</u>	<u>Measured Value</u>	<u>Method of Analysis</u>
Outside of the laboratory	Yeast and Fungus	300 cfu/1000L	Biomérieux Air Ideal

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

2)The results could be interpreted from the table below

Yeast and Fungus count in air	Quality class	Interpretation
Below 100 cfu/1000L	A	Perfect
Between 100 - 300 cfu/1000L	B	Moderate - Acceptable
More than 300 cfu/1000L	C	Bad - Non acceptable

Ref. -"Clean air solutions in food processing" Gun Wirtanen, Hanna Miettinen, Satu Pahkala,Setto Enbom, Liisa Vanne, VTT Publications 482, ESPOO 2002, sayfa 64

Analysis performed by

Sidika Can

Food Engineer

Date: 2/20/2012

OPTATIVE ANALYSIS REPORT

Report No : 8918

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **2/14/2012 - 20/02/2012**
Sample's
Type : **AIR SAMPLE**
Arrival Date to Laboratory : **2/14/2012**

<u>Place of Sampling</u>	<u>Analysis Performed</u>	<u>Measured Value</u>	<u>Method of Analysis</u>
Personnel WC air	Yeast and Fungus	400 cfu/1000L	Biomérieux Air Ideal

1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

2) The results could be interpreted from the table below

Yeast and Fungus count in air	Quality class	Interpretation
Below 100 cfu/1000L	A	Perfect
Between 100 - 300 cfu/1000L	B	Moderate - Acceptable
More than 300 cfu/1000L	C	Bad - Non acceptable

Ref. - "Clean air solutions in food processing" Gun Wirtanen, Hanna Miettinen, Satu Pahkala, Setto Enbom, Liisa Vanne, VTT Publications 482, ESPOO 2002, sayfa 64

Analysis performed by

Sidika Can

Food Engineer

Date: 2/20/2012

OPTATIVE ANALYSIS REPORT

Report No : 8918

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **2/14/2012 - 20/02/2012**
Sample's
Type : **AIR SAMPLE**
Arrival Date to Laboratory : **2/14/2012**

<u>Place of Sampling</u>	<u>Analysis Performed</u>	<u>Measured Value</u>	<u>Method of Analysis</u>
Personnel WC	Total Bacteria	650 cfu/1000L	Biomérieux Air Ideal

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

2)The results could be interpreted from the table below

Total Bacteria count in air	Quality class	Interpretation
Below 100 cfu/1000L	A	Perfect
Between 100 - 300 cfu/1000L	B	Moderate - Acceptable
More than 300 cfu/1000L	C	Bad - Non acceptable

Ref. -"Clean air solutions in food processing" Gun Wirtanen, Hanna Miettinen, Satu Pahkala,Setto Enbom, Liisa Vanne, VTT Publications 482, ESPOO 2002, sayfa 64

Analysis performed by

Sidika Can

Food Engineer

Date: 2/20/2012

OPTATIVE ANALYSIS REPORT

Report No : 8915

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **2/14/2012 - 20/02/2012**
Sample's
Type : **AIR SAMPLE**
Arrival Date to Laboratory : **2/14/2012**

<u>Place of Sampling</u>	<u>Analysis Performed</u>	<u>Measured Value</u>	<u>Method of Analysis</u>
Urine Analysis Room (air condition is off)	Yeast and Fungus	300 cfu/1000L	Biomérieux Air Ideal

1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

2)The results could be interpreted from the table below

Yeast and Fungus count in air	Quality class	Interpretation
Below 100 cfu/1000L	A	Perfect
Between 100 - 300 cfu/1000L	B	Moderate - Acceptable
More than 300 cfu/1000L	C	Bad - Non acceptable

Ref. -"Clean air solutions in food processing" Gun Wirtanen, Hanna Miettinen, Satu Pahkala,Setto Enbom, Liisa Vanne, VTT Publications 482, ESPOO 2002, sayfa 64

Analysis performed by

Sidika Can

Food Engineer

Date: 2/20/2012

OPTATIVE ANALYSIS REPORT

Report No : 8916

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **2/14/2012 - 20/02/2012**
Sample's
Type : **AIR SAMPLE**
Arrival Date to Laboratory : **2/14/2012**

<u>Place of Sampling</u>	<u>Analysis Performed</u>	<u>Measured Value</u>	<u>Method of Analysis</u>
Urine analysis Room (air condition is on)	Total Bacteria	450 cfu/1000L	Biomérieux Air Ideal

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

2)The results could be interpreted from the table below

Total Bacteria count in air	Quality class	Interpretation
Below 100 cfu/1000L	A	Perfect
Between 100 - 300 cfu/1000L	B	Moderate - Acceptable
More than 300 cfu/1000L	C	Bad - Non acceptable

Ref. -"Clean air solutions in food processing" Gun Wirtanen, Hanna Miettinen, Satu Pahkala,Setto Enbom, Liisa Vanne, VTT Publications 482, ESPOO 2002, sayfa 64

Analysis performed by

Sidika Can

Food Engineer

Date: 2/20/2012

OPTATIVE ANALYSIS REPORT

Report No 8912

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **2/14/2012 - 20/02/2012**
Sample's
Type : **Urine Analysis**
Arrival Date to Laboratory : **2/14/2012**

<u>Analysis</u>	<u>Results</u>	<u>Limite Value</u>	<u>Method</u>
<i>E.coli</i>	Pozitive	<i>It should be Negative</i>	ISO 4832 – 1991
<i>Total Coliform</i>	Pozitive	<i>It should be Negative</i>	ISO 4832 – 1991

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

Analizi Yapan
Sıdıka Can
Gıda Mühendisi

Date: 2/20/2012

OPTATIVE ANALYSIS REPORT

Report No 8911

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **2/14/2012 - 20/02/2012**
Sample's
Type : **Urine Analysis Table Surface**
Arrival Date to Laboratory : **2/14/2012**

<u>Analysis</u>	<u>Results</u>	<u>Limite Value</u>	<u>Method</u>
<i>E.coli</i>	<i>Pozitive</i>	<i>It should be Negative</i>	ISO 4832 – 1991
<i>Total Coliform</i>	<i>Pozitive</i>	<i>It should be Negative</i>	ISO 4832 – 1991

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

Analizi Yapan
Sıdıka Can
Gıda Mühendisi

Date: **3/8/2012**

OPTATIVE ANALYSIS REPORT

Report No 9137

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **3/1/2012 - 03/03/2012**
Sample's Type : **Urine Analyses Wall (That has AC)**
Arrival Date to Laboratory : **3/1/2012**

BEFORE THE DISINFECTION

<u>Analysis</u>	<u>Results</u>	<u>Limite Value</u>	<u>Method</u>
<i>E.coli</i>	<i>Negative</i>	<i>It should be Negative</i>	ISO 4832 – 1991
<i>Total Coliform</i>	<i>Negative</i>	<i>It should be Negative</i>	ISO 4832 – 1991
Total Bacteria	45 cfu / cm²	0 cfu / cm ²	ISO 4832 – 1991

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

Analizi Yapan
Sidika Can
Gıda Mühendisi

Date: **3/8/2012**

OPTATIVE ANALYSIS REPORT

Report No 9138

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **3/1/2012 03/023/2012**
Sample's Type : **Personnel WC Wall**
Arrival Date to Laboratory : **3/1/2012**

BEFORE THE DISINFECTION

<u>Analysis</u>	<u>Results</u>	<u>Limite Value</u>	<u>Method</u>
<i>E.coli</i>	<i>Negative</i>	<i>It should be Negative</i>	ISO 4832 – 1991
<i>Total Coliform</i>	<i>Negative</i>	<i>It should be Negative</i>	ISO 4832 – 1991
Total Bacteria	125 cfu / cm²	0 cfu / cm ²	ISO 4832 – 1991

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

Analizi Yapan
Sidika Can
Gıda Mühendisi

Date: **3/8/2012**

OPTATIVE ANALYSIS REPORT

Report No 9139

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **3/6/2012 - 08/03/2012**
Sample's Type : **Urine Analyses Wall (That has AC)**
Arrival Date to Laboratory : **3/6/2012**

AFTER THE DISINFECTION

<u>Analysis</u>	<u>Results</u>	<u>Limite Value</u>	<u>Method</u>
<i>E.coli</i>	<i>Negative</i>	<i>It should be Negative</i>	ISO 4832 – 1991
<i>Total Coliform</i>	<i>Negative</i>	<i>It should be Negative</i>	ISO 4832 – 1991
Total Bacteria	3 cfu / cm²	0 cfu / cm ²	ISO 4832 – 1991

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

Analizi Yapan
Sidika Can
Gıda Mühendisi

Date: **3/8/2012**

OPTATIVE ANALYSIS REPORT

Report No 91340

Aim of Analysis : **Optative**
Sender of the sample : **Erduran Laboratories**
Analysis Performed : **Microbiological**
Start and End Date of Analysis : **3/6/2012 - 08/03/2012**
Sample's Type : **Personnel WC Wall**
Arrival Date to Laboratory : **3/6/2012**

AFTER THE DISINFECTION

<u>Analysis</u>	<u>Results</u>	<u>Limite Value</u>	<u>Method</u>
<i>E.coli</i>	<i>Negative</i>	<i>It should be Negative</i>	ISO 4832 – 1991
<i>Total Coliform</i>	<i>Negative</i>	<i>It should be Negative</i>	ISO 4832 – 1991
Total Bacteria	5 cfu / cm²	0 cfu / cm ²	ISO 4832 – 1991

Note: 1) This analysis report is created upon special request and shall not be used in any means of official or judicial purposes.

Analizi Yapan
Sidika Can
Gıda Mühendisi

Lab results summary

Baseline values were established by means of air and direct contact samples to determine pre-disinfection levels. They were as follows:

1. Total bacteria levels outside of the laboratory 525 cfu/1000L
2. Total yeasts and fungus outside of the laboratory 300 cfu/1000L
3. Total yeasts and fungus in Personnel WC room 400 cfu/1000L
4. Total bacteria in Personnel WC room 650 cfu/1000L
5. Total yeasts and fungus: Urine analysis room: AC off 300 cfu/1000L
6. Total bacteria: Urine analysis room: AC on 450 cfu/1000L

These tests were all air sampling utilizing the *Biometrix Air Ideal* methodology and were based on a 1000 Liter sampling of ambient air. **All levels were at or above acceptable limits.**

The next series of tests were conducted to determine if either *E.coli* or *Total Coliform* bacteria were present. These tests were conducted prior to disinfection with Path-Away®.

1. Urine analysis room: *Positive for both E.coli and Total Coliform bacteria.*
2. Urine analysis table surface: *Positive for both E.coli and Total Coliform bacteria.*
3. Urine analysis room wall with AC: *Negative for both E.coli and Total Coliform but total bacteria count was 45 cfu/cm Sq.*
4. Personnel WC room wall: *Negative for both E.coli and Total Coliform but total bacteria count was 125 cfu/cm Sq.*

The post disinfection tests conducted are as follows:

1. Urine analysis room wall with AC: *Negative for both E.coli and Total Coliform but total bacteria count was reduced to 3 cfu/cm Sq.*
2. Personnel WC room wall: *Negative for both E.coli and Total Coliform but total bacteria count was reduced to 5 cfu/cm Sq.*

Summary:

Path-Away® Anti-Pathogenic Solution effected total bacteria levels with a reduction of 94% and 96% respectively. The efficacy was superb and the product is both natural and user friendly.