



Kappa Laboratories, Inc.

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LABORATORY REPORT

Kyanos Farms
Attn.: Timothy White
6885 57th St
Vero Beach, Florida 32967

August 22, 2017

Lab Ref. No.: 34340, Log #533817

Re: Microbiological results obtained from a sixty (60) days Refrigerated Shelf-Life Study of Spirulina Collected in Algae Strainer Bags sample.

The sample was delivered to Kappa Laboratories, Inc., 2577 NW 74th Avenue, Miami, Florida on June 15, 2017 at 9:43 a.m. via FedEx under Chain of Custody. The sample was received in a frozen condition. The analysis was performed for Kyanos Farms, Vero Beach, Florida.

Refrigerated Shelf-Life Testing:

The product was subjected to refrigerated conditions of 33 to 34 degrees Fahrenheit.

Total Aerobic Count (Aerobic Plate Count): FDA Bacteriological Analytical Manual (BAM), 8th Ed, Ch 3, 1998.

Coliform Count & E.coli: AOAC, 17th Edition Chapter 17, Section 966.23 – 966.24. FDA Bacteriological Analytical Manual (BAM), 8th Edition, Chapter 4, 1998.

Staphylococcus aureus: AOAC, 17th Edition Chapter 17, Section 975.55 & 987.09. FDA Bacteriological Analytical Manual (BAM), 8th Edition, Chapter 12, 1998

Total Mold Count (Aerobic Plate Count): FDA Bacteriological Analytical Manual (BAM), 8th Ed, Ch 18, 1998

Salmonella sp.: AOAC, 17th Edition, Chapter 17, Section 967.25 – 967.27, 999.09, 978.24 and 989.13, 995.20.

FDA Bacteriological Analytical Manual (BAM), 8th Edition, Chapter 5, 1995

PCR Salmonella spp.: SOP 1.1, Analysis by real time PCR Method

Listeria sp.: AOAC, 17th Edition, Chapter 17, Section 993.12, 992.18 & 997.03

PCR Listeria spp.: SOP 2.1, 2.2, Analysis by real time PCR Method

Test Time #1 – Initial Date

Spirulina Collected in Algae Strainer Bags	
Product Analysis Time = 06/15/2017 Initial	
Total Plate Count	3,000 cts / gm
Coliforms	93 MPN / gm
E. coli	<3.0 MPN / gm
Staphylococcus aureus	<100 cts / gm
Mold	300 cts / gm
Yeast	<100 cts / gm
PCR Salmonella spp.	Negative / 25 gm
PCR Listeria spp.	Negative / 25 gm
(Triple Tube Method for Coliforms)	

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Test Time #2 - 15 Days

<u>Spirulina Collected in Algae Strainer Bags</u> Product Analysis Time = 06/29/2017	
Total Plate Count	3,000 cts / gm
Coliforms	<3.0 MPN / gm
E. coli	<3.0 MPN / gm
Staphylococcus aureus	<100 cts / gm
Mold/Yeast	<100 cts / gm
(Triple Tube Method for Coliforms)	

Test Time #3 - 29 Days

<u>Spirulina Collected in Algae Strainer Bags</u> Product Analysis Time = 07/13/2017	
Total Plate Count	2,500 cts / gm
Coliforms	<3.0 MPN / gm
E. coli	<3.0 MPN / gm
Staphylococcus aureus	<100 cts / gm
Mold	400 cts / gm
Yeast	<100 cts / gm
(Triple Tube Method for Coliforms)	

Test Time #4 - 47 Days

<u>Spirulina Collected in Algae Strainer Bags</u> Product Analysis Time = 07/31/2017	
Total Plate Count	1,300 cts / gm
Coliforms	<3.0 MPN / gm
E. coli	<3.0 MPN / gm
Staphylococcus aureus	<100 cts / gm
Mold/Yeast	<100 cts / gm
(Triple Tube Method for Coliforms)	

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Test Time # 5 - 61 Days

<u>Spirulina Collected in Algae Strainer Bags</u> Product Analysis Time = 08/14/2017	
Total Plate Count	800 cts / gm
Coliforms	<3.0 MPN / gm
E. coli	<3.0 MPN / gm
Staphylococcus aureus	<100 cts / gm
Mold/Yeast	<100 cts / gm
(Triple Tube Method for Coliforms)	

MICROBIAL CONTROLS

Total Plate Count	Negative
Coliforms	Negative
E. coli	Negative
Staphylococcus aureus	Negative
Mold/Yeast	Negative
Salmonella sp.	Negative
Listeria sp.	Negative

Note: Less than (<) sign indicates Negative growth for those bacteria at the lowest level expressed. For example, <10 cts per gram would indicate Negative, or no growth, for the bacteria at a concentration of 1:10; if the bacteria is present it is less than this concentration.

Based upon the Microbiological results of the sample listed above and insofar as the analyses performed were able to assay for the presence or absence of specific pathogens, the sample analyzed would appear to be **wholesome and fit for human consumption** under refrigerated conditions for approximately sixty one (61) days.

Kappa Laboratories, Inc has been inspected and previously recognized by the U.S. Department of Agriculture (USDA Microbiology-#0093, Chemistry-#1282); Registered with the U.S. Food and Drug Administration (FDA-#1039389) and is an FDA Accepted Laboratory for Import Testing. Kappa Laboratories is currently a Contract Laboratory to the U.S. Centers for Disease Control (CDC), Atlanta, Georgia; Vessel Sanitation Program and is U.S. Dept. of Homeland Security, U.S. Coast Guard Recognized Facility.

Signed: 
Denise M. Kmlecek
Manager, Kappa Laboratories, Inc.