CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	31
DateRun:	02/21/2023
Experimenters:	Zoe Lawson, Tatyanna Moreland Junior, Amelia Wagner, Mei Jin
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Glass/Quartz, Liquid
PartType:	Coupon
Contaminants:	Odor
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Smell
Purpose:	To evaluate the efficacy of a product's ability to reduce malodor.

Experimental Procedure:

Fifteen clean 250 milliliters (ml) glass bottles, three per product, were filled with six milliliters of spoiled whole milk. Each of the four supplied cleaning products was prepared as a mixture of 6.25ml products in 500ml of autoclaved minimal media in spray bottles, and the control was untreated spoiled milk. Three bottles were treated for each supplied product mixture for a total of three treatment cycles, with each treatment cycle consisting of two sprays of the respective product directly into the bottle. Following each treatment cycle, the bottles were swirled around so the cleaner mixed with the spoiled milk.
Four panelists rated the malodor of the milk after each treatment cycle using the following rating key:

Rating	Description
1	No malodor
2	Slight malodor
3	Noticeable malodor
4	Strong malodor
5	Very strong malodor

An effective product needs to have an average rating of two or one. Each bottle, including the control, had to be rated a five before starting the test. After the first and second treatments, the bottles sat at room temperature to evaluate if there was an increase in malodor after 24 hours. Panelists rated the malodor of the milk after the overnight aging of the milk bottles before spraying a third and final treatment into the bottles to keep them at room temperature for a total of 240 hours and final malodor ratings were taken.

Protocol for 1L of Minimal Media:
- 7.50 g Bacto peptone media
- 3.27g Bushnell Hass Broth
- 1 Liter DI Water

Results:

The product that reduced the most malodor was Roebic's K-37 Septic Tank Treatment even after 24 hours. The least effective product overall at reducing malodor was Roebic's RV & Marine Holding Tank. Both Instant Power RV & Marine Holding Tank and Instant Power Septic Shock had some initial reduction after the first and second treatments. Without continuous treatment, all four products regressed back to a very high malodor after a total of 10 days (240 hours).

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Product	Averages of Four Panelists				
	Initial Ratings	After 1st Treatment	After 2nd Treatment	After 24 Hours	After 240 Hours
Instant Power RV & Marine Holding Tank	5	3.75	4.13	4.29	5
Roebic's RV & Marine Holding Tank	5	4.50	4.00	4.21	5
Instant Power Septic Shock	5	3.58	3.50	4.83	5
Roebic's K-37 Septic Tank Treatment	5	3.50	2.54	3.75	5
Control (Spoiled Milk)	5	5	5	5	5

Summary:

Substrates:	Glass/Quartz, Liquid
Contaminants:	Odor

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Instant Power	RV & Marine Tank Treatment	6.25ml/500ml minimal media		☐	
ROEBIC Laboratories, Inc.	RV and Marine Holding Tank Treatment	6.25ml/500ml minimal media		☐	
Instant Power	Septic Shock	6.25ml/500ml minimal media		☐	
ROEBIC Laboratories, Inc.	K-37 Septic Tank Treatment	6.25ml/500ml minimal media		☐	

Conclusion: None of the products tested were considered effective in the reduction of malodor.