CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2016
DateRun:	11/06/2016
Experimenters:	Vinh Tran
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Liquid
PartType:	Coupon
Contaminants:	Odor
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Smell
Purpose:	To evaluate the effectiveness of the supplied cleaners with odor elimination.
Experimental Procedure:	Clean 250 ml glass bottles were filled with 6 ml of whole milk. The bottles were capped and stored at room temperature and allowed to ferment for three days. After the three days a panel of three smelled each of the bottles for an initial odor evaluation. The supplied cleaning products were diluted to 50% concentration using room temperature water. Three bottles were treated for each supplied cleaner for three treatment cycles, with each treatment cycle consisting of two sprays of the respective cleaner directly into the bottle. Following each treatment cycle the bottles are swirled and agitated so the cleaner can mix with the cleaner. After each treatment cycle the panelists rated the malodor of the milk in the bottles. The six milk bottles were treated for a total of three treatment cycles, six sprays overall of each cleaner. The panelists rated the malodor of the milk after each treatment cycle, with a value of 1 defined as the best and a value of 5 on the other end of the spectrum defined as the worst. Subsequently, the six milk bottles were allowed to ferment at room temperature overnight. The same panelists rated the malodor of the milk the following day. The six bottles were then subjected to a final treatment cycle of two sprays of their respective supplied cleaners. The panelists smelled the bottles once again for a final rating. A value of 2 or below is considered effective after the three treatment cycles.

Results:

Cleaner	Pre Clean	Original		Average
Bottle 1	5.0	5.0	5.0	5.0
Bottle 2	5.0	5.0	4.5	4.8
Bottle 3	5.0	5.0	5.0	5.0
				% Average: 4.9
Cleaner	Pre Clean	Sprays: 2		Average
Bottle 1	3.7	3.5	2.5	3.2
Bottle 2	3.0	2.0	3.0	2.7
Bottle 3	1.5	2.0	2.5	2.0
				% Average: 2.6
Cleaner	Pre Clean	Sprays: 4		Average
Bottle 1	3.5	3.0	3.0	3.2
Bottle 2	2.0	2.0	2.5	2.2
Bottle 3	1.0	1.0	1.0	1.0
				% Average: 2.1
Cleaner	Pre Clean	Sprays: 6		Average
Bottle 1	1.5	1.0	1.0	1.2

CLEANING LABORATORY EVALUATION SUMMARY

Bottle 2	1.5	1.5	1.5	1.5
Bottle 3	1.0	1.0	1.0	1.0
				% Average: 1.2

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Cleaner	Post Clean	Original		Average
Bottle 1	5.0	4.0	4.5	4.5
Bottle 2	4.0	3.5	4.5	4.0
Bottle 3	4.0	3.5	4.0	3.8
				% Average: 4.1
Cleaner	Post Clean	Sprays: 2		Average
Bottle 1	4.0	3.5	3.5	3.7
Bottle 2	2.0	2.0	1.5	1.8
Bottle 3	3.0	2.5	2.5	2.7
				% Average: 2.7
Cleaner	Post Clean	Sprays: 4		Average
Bottle 1	3.0	3.0	3.0	3.0
Bottle 2	2.0	1.8	1.5	1.8
Bottle 3	2.5	2.5	1.5	2.2
				% Average: 2.3
Cleaner	Post Clean	Sprays: 6		Average
Bottle 1	2.0	2.0	2.5	2.2
Bottle 2	2.0	1.0	1.0	1.3
Bottle 3	2.0	2.0	2.5	2.2
				% Average: 1.9
Cleaner	Biological Liquid Odor Control Cleaner	Original		Average
Bottle 1	4.0	3.5	4.5	4.0
Bottle 2	3.0	4.5	4.0	3.8
Bottle 3	3.0	4.0	3.0	3.3
				% Average: 3.7
Cleaner	Biological Liquid Odor Control Cleaner	Sprays: 2		Average

CLEANING LABORATORY EVALUATION SUMMARY

Bottle 1	3.5	3.5	4.0	3.7
Bottle 2	3.0	4.5	4.0	3.8
Bottle 3	2.5	4.0	3.0	3.2
				% Average: 3.6
Cleaner	Biological Liquid Odor Control Cleaner	Sprays: 4		Average
Bottle 1	3.0	3.0	3.5	3.2
Bottle 2	2.0	3.0	3.0	2.7
Bottle 3	2.5	3.0	2.5	2.7
				% Average: 2.8
Cleaner	Biological Liquid Odor Control	Sprays: 6		Average
Bottle 1	2.0	2.5	2.5	2.3
Bottle 2	1.5	2.0	2.0	1.8
Bottle 3	2.0	3.0	2.0	2.3
				% Average: 2.2

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Cleaner	Odor Eliminator (Spring Scent)	Original		Average
Bottle 1	5.0	5.0	5.0	5.0
Bottle 2	5.0	4.7	5.0	4.9
Bottle 3	5.0	5.0	5.0	5.0
				% Average: 5.0
Cleaner	Odor Eliminator (Spring Scent)	Sprays: 2		Average
Bottle 1	2.0	3.0	2.5	2.5
Bottle 2	2.0	2.5	2.5	2.3
Bottle 3	2.0	2.0	2.0	2.0
				% Average: 2.3
Cleaner	Odor Eliminator (Spring Scent)	Sprays: 4		Average
Bottle 1	2.0	2.0	3.0	2.3
Bottle 2	1.5	2.0	2.0	1.8
	1.5	2.5	1.0	1.7

CLEANING LABORATORY EVALUATION SUMMARY

Bottle 3				
				% Average: 1.9
Cleaner	Odor Eliminator (Spring Scent)	Sprays: 6		Average
Bottle 1	1.5	1.0	1.0	1.2
Bottle 2	1.0	1.0	1.0	1.0
Bottle 3	1.0	1.0	1.0	1.0
				% Average: 1.1

Summary Table

Cleaner	Sprays: 6	**Observations**	**Rank**
Pre Clean	1.2	Effective	2
Post Clean	1.9	Effective	3
Biological Liquid Odor Control Cleaner	2.2	Partially Effective	4
Odor Eliminator Spring Scent	1.1	Effective	1

When reevaluated overnight, two products kept the malodor under two (malodor did not return). The other two Post Clean and BLOC resulted in increased malodor levels. After treating with an additional set of sprays, the BLOC malodor was reduced.

Overnight Summary Table

Cleaner	Overnight Avg.	After Spray
Pre Clean	1.6	1.6
Post Clean	4.0	3.6
Biological Liquid Odor Control/ Cleaner	3.5	1.8
Odor Eliminator	1.5	1.0

Summary:

Substrates:	Liquid
Contaminants:	Odor

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Rochester Midland Corporation	PRS Water Damage Pre Clean	50	0.00	☑	Rank 2
Rochester Midland Corporation	PRS Water Damage Post Clean	100	0.00	☑	Rank 3
Rochester Midland Corporation	Biological Liquid Odor Control Cleaner	50	0.00	☐	Rank 4
Wurth	Odor Eliminator	100	0.00	☑	Rank 1

Conclusion:

A cleaning agent is considered partially effective if the malodor level is mitigated from its initial malodor rating after the sprays. A ranking value of 1 is considered close to no smell of malodor, while a maximum rating of 5 is considered the worst malodor level. All cleaners reduced the initial malodor smell. Three of four would be considered effective after 6 treatments. The fourth averaged just over the rating of 2.

After the overnight sit, two of the products kept the malodor under control. The Post Clean was the only product that did not reduce the level below 2 after the final treatment.