CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2018
DateRun:	08/22/2018
Experimenters:	Vinh Tran, James Keats, Othon Pagounes, Ted Kearney, Harry Rankin
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Liquid
PartType:	Coupon
Contaminants:	Odor, Food
Cleaning Methods:	Low Pressure Spray
Analytical Methods:	Smell
Purpose:	
Experimental Procedure:	A total of nine clean glass bottles were filled with six milliliters of whole milk. Six of these bottles would be treated by formulations and the remaining three bottles would be used as controls. All bottles were capped and stored in a room for three days at room temperature (68F). After the 72-hour spoiling period, the bottles were opened and a panel of five observed for signs of spoiling odor, according to the rating system (see below). Three bottles were reserved for each formulation, and two sprays of the respective formulation were sprayed into the bottle. After swirling the contaminants in the bottle ensuring a mixture, the odor panel graded each bottle with their ratings recorded. This process continued by introducing two sprays into each bottle of its respective formulation and rating until six total sprays were reached. The milk bottles were stored once again at room temperature and sat overnight. All testing bottles were rated the next day with no treatment, and then an additional two sprays were added before final ratings. The following rating system was used to assess the malodor of the spoiled milk: 1 = No Malodor 5 = High Malodor
Results:	Although over night the Febreze Formulation's rating had little to no change while the Formulation AC-6377 had almost a full increase in one level of rating, with a positive influx of 0.9. A cleaner is considered to be an effective cleaning agent is one that has a rating that is under two. The Febreze Fabric Free Nature Formulation did accomplish that with a total of 8 sprays in 24 hours, finishing the experiment with an average of 1.30. The Formulation AC-6377 did come close to accomplishing this as well, with a rating of 2.07, but there is a significant difference between the two formulations in the last rating of 0.77. Overall, in comparison, the Febreze Fabric Free Nature Formulation had a more consistent and effective malodor elimination than the Formulation AC-6377.

Formulation AC-6377

Original (Untreated 72 Hours)						
	*Panel*ist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 1 A	3	3	2	3.5	2	2.7
Bottle 1 B	5	5	5	5	4	4.8
Bottle 1 C	4	5	3	4.5	2	3.7

2 Sprays						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 1 A	4	2	2.5	3	4	3.1
Bottle 1 B	4	3	3	5	4	3.8
Bottle 1 C	3	2	1.5	2.5	3	2.4

4 Sprays						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average

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Bottle 1 A	4	2	2	2.5	4	2.9
Bottle 1 B	3	2	2	2.5	5	2.9
Bottle 1 C	2	1	1	1	3	1.6

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6 Sprays						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 1 A	1.5	1	1.5	2	4	2.0
Bottle 1 B	2	3	2	2.5	4	2.7
Bottle 1 C	2	2	1.5	1	3	1.9

Overnight						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 1 A	3	1	1.5	3.5	4	2.6
Bottle 1 B	4	4	4	5	5	4.4
Bottle 1 C	2	1	2	3	3.5	2.3

8 Sprays						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 1 A	2.5	1	1	1	2	1.5
Bottle 1 B	3	2	2.5	2.5	5	3.0
Bottle 1 C	1.5	2	1.5	1.5	2	1.7

Febreze Fabric Free Nature Formulation

Original (Untreated 72 Hours)						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 2 A	3	3	2.5	3	2	2.7
Bottle 2 B	3	2	3	2.5	2	2.5
Bottle 2 C	4	3	4	4.5	3	3.7

2 Sprays						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 2 A	2	1	2.5	3	2	2.1
Bottle 2 B	2	2	2	1	2	1.8
Bottle 2 C	2	2	2.5	4	2	2.5

4 Sprays						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average

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Bottle 2 A	2	1	2	1.5	2	1.7
Bottle 2 B	2	2	2	1.5	2	1.9
Bottle 2 C	2	2	2	3	2	2.2

6 Sprays						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 2 A	1.5	1	1.5	1.5	1.5	1.4
Bottle 2 B	1	1	1	1	1.5	1.1
Bottle 2 C	2.5	2	1.5	2	1.5	1.9

Overnight						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 2 A	1	2	1.5	2	1	1.5
Bottle 2 B	1.5	1	2	1	1	1.3
Bottle 2 C	1.5	2	1.5	2.5	1	1.7

8 Sprays						
	Panelist 1	Panelist 2	Panelist 3	Panelist 4	Panelist 5	Average
Bottle 2 A	1	2	1	1.5	1	1.3
Bottle 2 B	1.5	1	2	1	1	1.3
Bottle 2 C	1	2	1.5	1	1	1.3

Averages

	Original	2 Sprays	4 Sprays	6 Sprays	Overnight	8 Sprays
Formulation AC-6377	3.73	3.10	2.47	2.20	3.10	2.07
Febreze Fabric Free Nature Formulation	2.97	2.13	1.93	1.47	1.50	1.30

Difference of Average per Cycle

	Original	2 Sprays	4 Sprays	6 Sprays	Overnight	8 Sprays
Formulation AC-6377	0	- 0.63	- 0.63	- 0.27	+ 0.90	- 1.03
Febreze Fabric Free Nature Formulation	0	- 0.84	- 0.20	- 0.46	+ 0.03	- 0.20

Summary:

Substrates:	Liquid				
Contaminants:	Odor, Food				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Eurofiin	Formulation AC-6377	100	0.00	☐	observed to be less effective than the comparative formulation

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Procter & Gamble	Febreze FABRIC Spring & Renewal	100	0.00	☑	

Conclusion: Formulation AC-6377 was observed to be less effective than the comparative formulation, Febreze Fabric Free Nature, in eliminating the malodor of spoiled milk. Both formulations were equally capable in reducing the original malodor, as seen in the total differences before the overnight AC-6377 reduced the rating by 1.53 and the Febreze by 1.50.