CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2022
DateRun:	08/16/2022
Experimenters:	Zoe Lawson, Tatyanna Moreland Junior, Alexander Symko
ClientType:	
ProjectNumber:	Project #3
Substrates:	Food
PartType:	Coupon
Contaminants:	Odor
Cleaning Methods:	
Analytical Methods:	Smell
Purpose:	To evaluate the effectiveness of FunkAway Pump spray, FunkAway disinfectant spray, and Febreze on eliminating milk malodor.
Experimental Procedure:	Nine clean 250 ml glass bottles were filled with 6 ml of spoiled whole milk. 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 were swirled around so the cleaner can mix with the cleaner. After each treatment cycle the panelists rated the malodor of the milk in the bottles. The panelists rated the malodor of the milk after each treatment cycle, from a value of 1 defined as no malodor to a value of 5 as high malodor. Subsequently, the nine milk bottles were allowed to ferment at room temperature overnight to see if there are any increase in malodor level after an overnight sit. Thereafter, the same panelists rated the malodor of the milk after the overnight aging of the milk bottles. The nine bottles were then subjected to a final treatment cycle, which consisted of two sprays of their respective supplied cleaners. The panelists then rated the malodor level for each milk bottles.
Results:	Table 1: FunkAway Pump Spray

Treatment	Untreated			Average	Overall Average
Bottle 1	5	5	5	5	5
Bottle 2	5	5	5	5	
Bottle 3	5	5	5	5	
Treatment	2 Sprays			Average	Overall Average
Bottle 1	4	3.5	4	3.8	4.1
Bottle 2	4.5	3.5	5	4.3	
Bottle 3	4.5	3	4.5	4.0	
Treatment	4 Sprays			Average	Overall Average
Bottle 1	4	2.5	3	3.2	3.1
Bottle 2	4	3	2.5	3.2	
Bottle 3	4	2.5	2.5	3	
Treatment	6 Sprays			Average	Overall Average
Bottle 1	3	3	3	3	3.1
Bottle 2	4	3	3	3.3	
Bottle 3	3.5	3	2.5	3	
Treatment	Overnight			Average	Overall Average
Bottle 1	5	4	3.5	4.2	4.3
Bottle 2	5	4	4.5	4.5	
Bottle 3	5	4.5	3.5	4.3	
Treatment	8 Sprays			Average	Overall Average
Bottle 1	3	3.5	3.5	3.3	3.6
Bottle 2	4	3	4	3.7	
Bottle 3	4	3.5	3.5	3.7	

Table 2: FunkAway Disinfectant Spray

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Treatment	Untreated			Average	Overall Average
Bottle 1	5	5	5	5	5
Bottle 2	5	5	5	5	
Bottle 3	5	5	5	5	
Treatment	2 Sprays			Average	Overall Average
Bottle 1	3	3	3.5	3.2	3.2
Bottle 2	4	2.5	3.5	3.3	
Bottle 3	3.5	2.5	3.5	3.2	
Treatment	4 Sprays			Average	Overall Average
Bottle 1	2	3	2	2.3	2.6
Bottle 2	2.5	2.5	2	2.3	
Bottle 3	3	2.5	3.5	3	
Treatment	6 Sprays			Average	Overall Average
Bottle 1	2	2.5	2	2.2	2.6
Bottle 2	2	3	3	2.7	
Bottle 3	3	3	2.5	2.8	
Treatment	Overnight			Average	Overall Average
Bottle 1	4.5	5	3	4.2	4.2
Bottle 2	4.5	5	3.5	4.3	
Bottle 3	4	5	3.5	4.2	
Treatment	8 Sprays			Average	Overall Average
Bottle 1	2	2	2.5	2.2	2.2
Bottle 2	3	2	2	2.3	
Bottle 3	2.5	2	2	2.2	

Table 3: Febreze

Treatment	Untreated			Average	Overall Average
Bottle 1	5	5	5	5	5
Bottle 2	5	5	5	5	
Bottle 3	5	5	5	5	
Treatment	2 Sprays			Average	Overall Average
Bottle 1	5	5	5	5	4.2
Bottle 2	3.5	2.5	4.5	3.5	
Bottle 3	4	4	4.5	4.2	
Treatment	4 Sprays			Average	Overall Average
Bottle 1	4	3.5	4	3.8	3.6
Bottle 2	3.5	3	3.5	3.3	
Bottle 3	3	3.5	4	3.5	
Treatment	6 Sprays			Average	Overall Average
Bottle 1	3	3.5	3	3.2	3.2
Bottle 2	3	3.5	3	3.2	
Bottle 3	3.5	3	3	3.2	
Treatment	Overnight			Average	Overall Average
Bottle 1	4	5	3	4	3.9
Bottle 2	3.5	5	3	3.8	
Bottle 3	4	5	3	4	
Treatment	8 Sprays			Average	Overall Average
Bottle 1	2	3	4	3	3.1
Bottle 2	2	3.5	3.5	3	

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Bottle 3	3	3	3.5	3.2	

Table 4: Summary of results from untreated to six sprays

Cleaner	Untreated Malodor Rating	Treatment (Cycle)	Avg. Treatment Rating After 3 Cycles
FunkAway Pump Spray	5	4.1	3.1
FunkAway Disinfectant Pump Spray	5	3.2	2.6
Febreze	5	4.2	3.2

Table 5: Summary of results before and after overnight treatment

Cleaner	Untreated Malodor Rating	Treatment (Cycle)	Avg. Treatment Rating After 4 Cycles
FunkAway Pump Spray	5	4.1	3.6
FunkAway Disinfectant Pump Spray	5	3.2	2.2
Febreze	5	4.2	3.1

While all 3 products demonstrated reduced odor eliminating ability after being left overnight, the FunkAway disinfectant spray was significantly more efficient at odor elimination. Its average malodor rating after only 1 treatment cycle was almost an entire value below both the Febreze and FunkAway pump spray as seen in table 4. The average malodor rating after 3 cycles was also significantly lower for the FunkAway disinfectant pump spray compared to the other 2 products at a value of 2.6. This trend is repeated in the overnight treatment, with the FunkAway disinfectant spray once again being rated as more effective at odor elimination compared to both the Febreze and FunkAway Pump spray as seen in table 5.

Summary:

Substrates:	Food				
Contaminants:	Odor				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Market Ready	Funkaway	Pump spray		☑	
Market Ready	Funkaway	Disinfectant spray		☑	
Procter & Gamble	Febreze Free Nature			☑	

Conclusion:

FunkAway disinfectant spray was the most effective at reducing malodor from spoiled milk, maintaining this reduction overnight, and further reducing malodor after an additional treatment cycle. Febreze was the second most effective with a reduced average malodor rating after three cycles of treatment and a reduced malodor rating after an overnight period with an additional two sprays. FunkAway Pump spray was the least effective among the cleaners with the highest malodor average rating after three cycles and the highest average rating after sitting overnight with an additional treatment cycle.