Supplemental Materials

Figure S1: Microbial counts [$\log_{10}$(CFU/ml)] for inoculated milk on (A) selective media and (B) nonselective media, and for uninoculated milk on (C) selective media and (D) nonselective media. In each panel, colored points represent counts from a sample of a milk carton (replicate) for the start of the first lunch service (closed circle) to the end of the second lunch service (open triangle). Microbial counts were not significantly different between the two media types ($P = 1.00$)

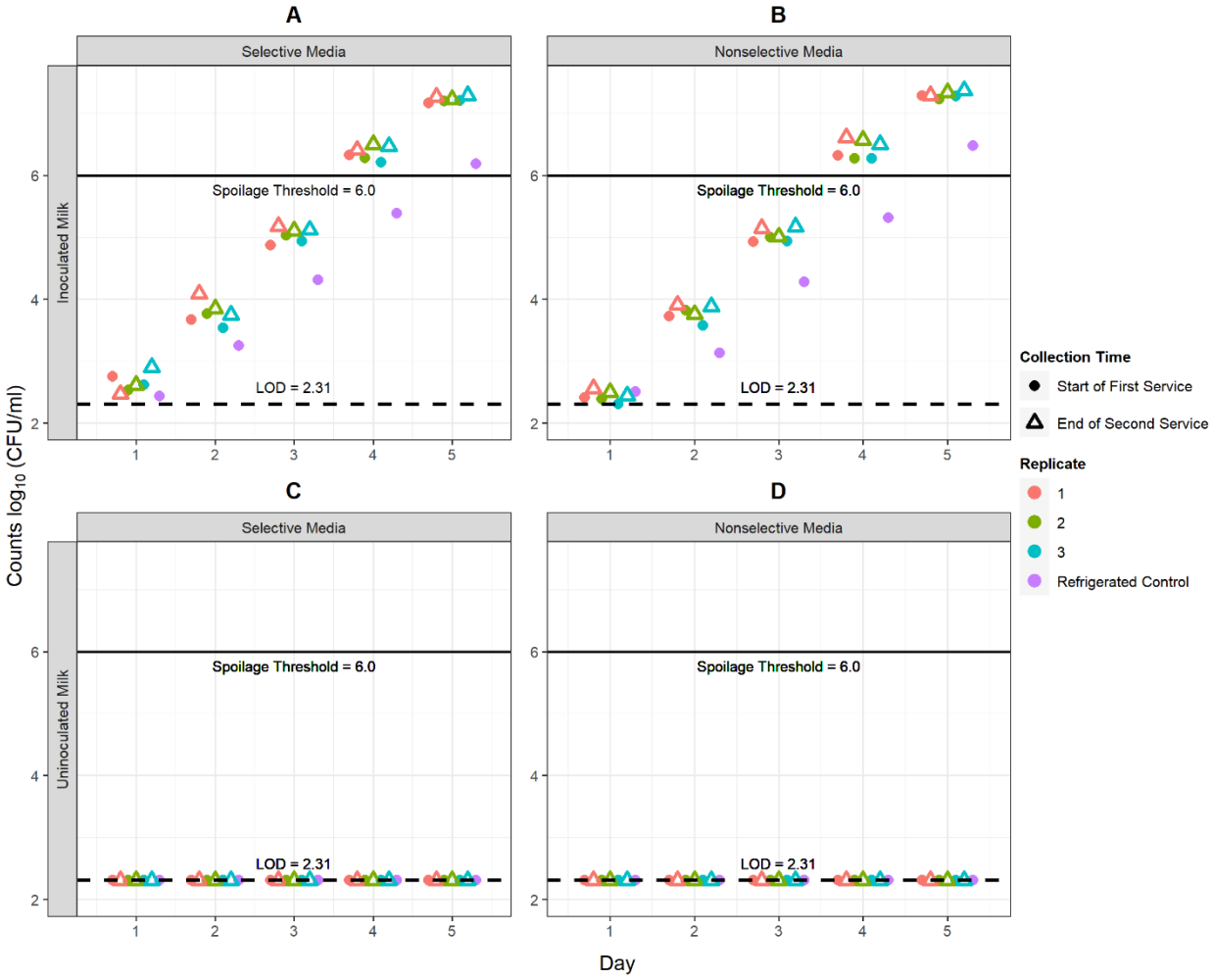

Fig S2: The base simulation consists of three main steps: (i) selection of food items (ii) sit down step, (iii) share table. The main simulation is iterated for each student to represent students interacting with the milk in the cafeteria system. The base simulation is repeated two times to represent two 50-minute services with a 25-minute break in between. This is repeated for 5 days to represent a week, at the end of Day 5 leftover items are discarded. This process is repeated 1,000 times to represent 1,000 weeks of cafeteria services.

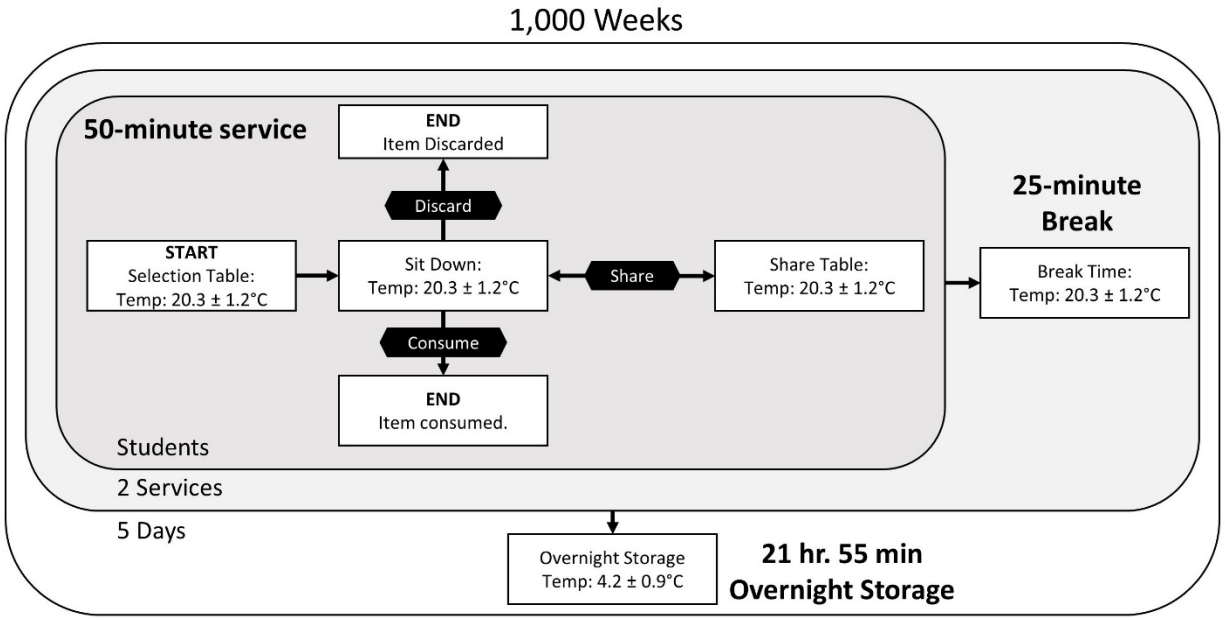

Figure S3: Comparison of modeled growth curves compared to experimental data with an adjustment factor of 1.34 applied and without an adjustment factor applied.

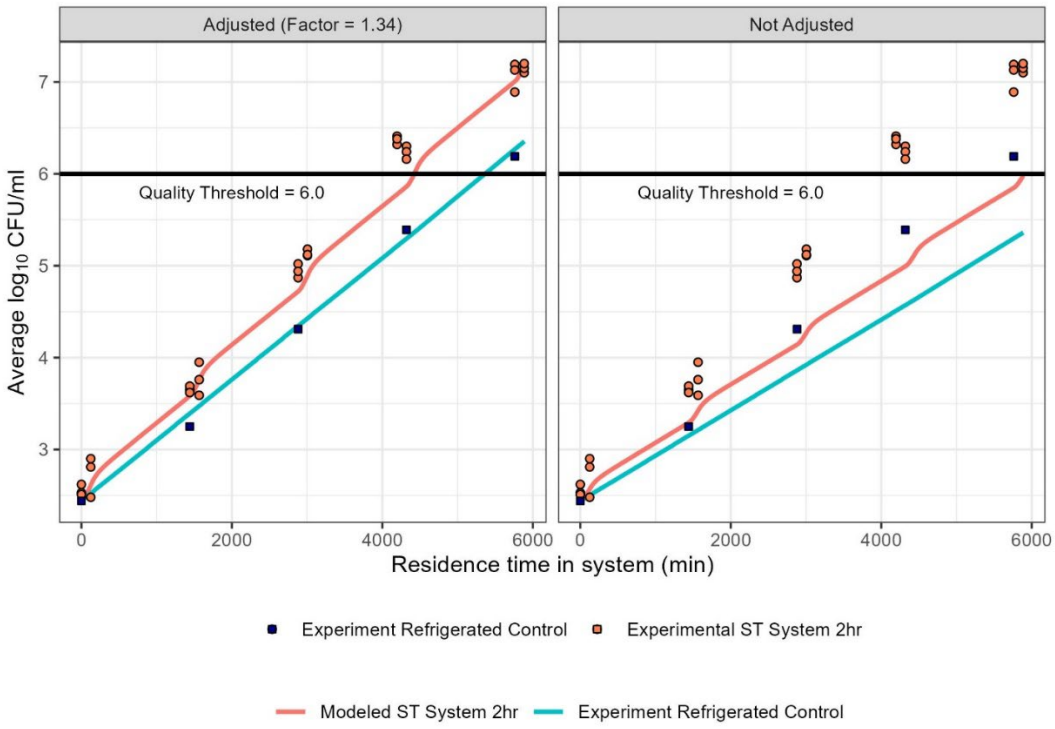

Table S1: Mean change in microbial counts ± standard deviation (SD) [$\log_{10}$(CFU/ml)] in milk cartons (n =3-4) during an ambient temperature share table and refrigerated control milk cartons [RC, (n =1)] during the winter (20.3 °C ± 1.2 °C) and summer (23.1 °C ± 0.24 °C) trials. SD is not reported for refrigerated controls since there is only one milk carton. Tukey's Honest Significant Difference test at 5% significance level ($\alpha = 0.05$) was used to assess differences within milk categories (vertically): (i) comparison between overall mean for each storage type and season (capital letters) and (ii) comparison between mean per day for each storage type and season (lower case letters). Means followed by a common letter were not found to be significantly different.

Storage Type	Day	Mean change in counts ± SD $\log_{10}$(CFU/ml) by milk category					
		Not inoculated	RC – Not Inoculated	Inoculated		RC – Inoculated	
Winter							
Share Table	1	0.0 ± 0.0◆[a]	N/A	0.13 ± 0.022[a]		N/A	
	2	0.0 ± 0.0[a]	N/A	0.14 ± 0.18[a]		N/A	
	3	0.0 ± 0.0[a]	N/A	0.15 ± 0.12[a]		N/A	
	4	0.0 ± 0.0[a]	N/A	0.27 ± 0.039[a]		N/A	
	5	0.0 ± 0.0[a]	N/A	0.069 ± 0.058[a]		N/A	
Overall Mean ± SD		0.0 ± 0.0[A]	-	0.15 ± 0.11[A]		-	
Overnight Refrigeration	1	0.0 ± 0.0[a]	0.0[a]	1.2 ± 0.10[f]		0.62[a,b]	
	2	0.0 ± 0.0[a]	0.0[a]	1.1 ± 0.12[f]		1.2[a]	
	3	0.0 ± 0.0[a]	0.0[a]	1.2 ± 0.075[f]		1.1[a]	
	4	0.0 ± 0.0[a]	0.0[a]	0.71 ± 0.067[f]		1.2[a]	
Overall Mean ± SD		0.0 ± 0.0[A]	0.0	1.1 ± 0.22[B]		0.99 ± 0.25[A]	
Summer				A	B	A	B
Share Table	1	0.0 ± 0.0[a]	N/A	0.0 ± 0.0[a,b]	-0.050 ± 0.10[a]	N/A	N/A
	2	0.05 ± 0.16[a]	N/A	0.16 ± 0.17[a,b]	0.23 ± 0.13[a]	N/A	N/A
	3	0.15 ± 0.14[a,d]	N/A	0.26 ± 0.19[a,b]	0.17 ± 0.15[a]	N/A	N/A
	4	0.16 ± 0.05[a,d]	N/A	0.18 ± 0.11[a,b]	0.06 ± 0.11[a]	N/A	N/A
	5	0.35 ± 0.07[b,d]	N/A	0.13 ± 0.15[a,b]	0.29 ± 0.16[a,h]	N/A	N/A
Overall Mean ± SD		0.14 ± 0.15	-	0.18 ± 0.15*[A]	0.19 ± 0.15*[A]	-	-
Overnight Refrigeration	1	0.07 ± 0.14[a]	0.0[a]	0.56 ± 0.19[b,c,g]	0.65 ± 0.05[g,h]	0.16[b]	0.39[a,b]
	2	0.53 ± 0.11[b,c]	0.0[a]	1.0 ± 0.07[d,e,f]	0.99 ± 0.22[f]	0.84[a]	0.94[a]
	3	0.67± 0.11[c]	0.38[b]	1.4 ± 0.25[d,f]	1.4 ± 0.21[f]	1.16[a]	0.84[a]
	4	0.55 ± 0.09[b,c]	0.39[b]	0.78 ± 0.12[c,e,f]	0.64 ± 0.21[f,g,h]	0.84[a]	0.83[a]
Overall Mean ± SD		0.45 ± 0.26	0.38 ± 0.0040	1.1 ± 0.28*[B]	0.99 ± 0.36*[B]	0.95 ± 0.19*[A]	0.87 ± 0.061*[A]

◆ Zero value indicates there was no change in growth because enumeration was below the limit of detection (LOD) of 2.31 $\log_{10}$(CFU/ml)

*Overall averages and standard deviations for Summer A and Summer B inoculated milk cartons and for the inoculated Summer Refrigerated Controls A and B were calculated omitting data from the first day of the share table and the first overnight storage due to the longer lag phase of *P. poae* observed

Table S2: Results for outcomes (consumed by the student, discarded by the student, or donated) of simulated milk cartons for each day of service in the system. The percentage of the total amount of milk cartons by each outcome (row) is represented by (%).

Outcome	Amount of milk cartons by day of service in the system (% milk cartons of row total)					
	1 Day	2 Days	3 Days	4 Days	5 Days	Total
Consumed	344,745 (89.1%)	41,152 (10.6%)	797 (0.206%)	10 (0.00259%)	0 (0%)	386,704
Discarded	47,275 (89.7%)	5,334 (10.1%)	100 (0.190%)	0 (0%)	0 (0%)	52,709
Donated	11,728 (97.8%)	258 (2.15%)	11 (0.00917%)	0 (0%)	0 (0%)	11,997
Total	403,748 (89.4%)	46,744 (10.4%)	908 (0.201%)	10 (0.00222%)	0 (0%)	451,410 (100%)

Table S3: Summary of share table simulation on milk carton time in the system, population change of milk cartons, and total percent of milk cartons that exceeded the spoilage threshold of 6 $\log_{10}$(CFU/ mL)

Sharing Status	Time in the system (minutes-median)	Time in the system (minutes-2.5^{th} – 97.5^{th} quantiles)	Population change (log CFU/ mL - median)	Population change (2.5^{th} – 97.5^{th} quantiles)	Milk cartons above 6 $\log_{10}$(CFU/ mL) threshold (%)
Summer					
Non-shared Milk	81	4-123	0.172	0.00617-0.263	0/348,753 (0%)
Shared Milk	118	9-1,489	0.252	0.0167-1.26	6/102,657 (0.00584%)
Overall	85	4-1,480	0.181	0.00617-1.24	6/451,410 (0.00133%)
Winter					
Non-shared Milk	81	4-123	0.162	0.00345-0.251	0/348,753 (0%)
Shared Milk	118	9-1,489	0.240	0.0109-1.22	3/102,657 (0.00292%)
Overall	85	4-1,480	0.171	0.00345-1.20	3/451,410 (0.000665%)