



# Agitation Studies

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WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION (DATCP)

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# DEFINITIONS

- “Universal” sample taken for regulatory purposes as outlined in Section 6 and or Appendix N
  - Universal sampling system puts more validity and faith in samples collected by industry personnel.
  - **Milk shall be agitated to a homogeneous blend.**
- Appendix N Sample from a commingled load
  - Shall be sampled after the last producer has been picked up and before any additional commingling. These bulk milk pickup tanker samples may be collected using an approved aseptic sampler.
  - **The samples shall be representative**



# WHY ARE AGITATION STUDIES NEEDED?

- Direct ship loads cannot be sampled the way a conventional farm bulk tank can be sampled.
  - No protection at farm.
  - Don't want to break seals.
  - No agitation in tanker.
- Need to be sampled at plant.
- Need to assure that these samples meet the same level of validity as those taken from conventional farm bulk tanks.
  - Homogeneous blend or representative.



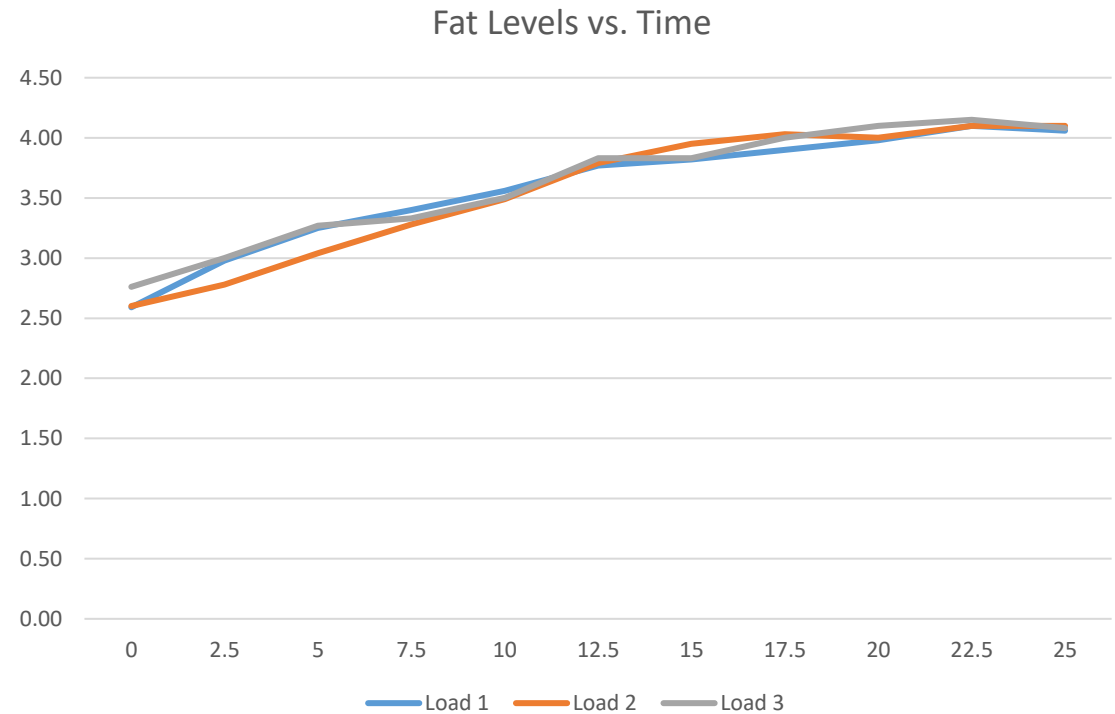
# REQUIRED ELEMENTS FOR STUDIES

- Facility needs to start with its “worst case scenarios.”
  - Least travel, longest time stationary.
  - Largest truck – smallest/slowest agitator.
- Take samples and measure fat levels.
- Start at “zero time.”
- Fat level needs to “level off” to  $\pm 0.10$  to  $0.15\%$  change from sample to sample.



# EXAMPLES

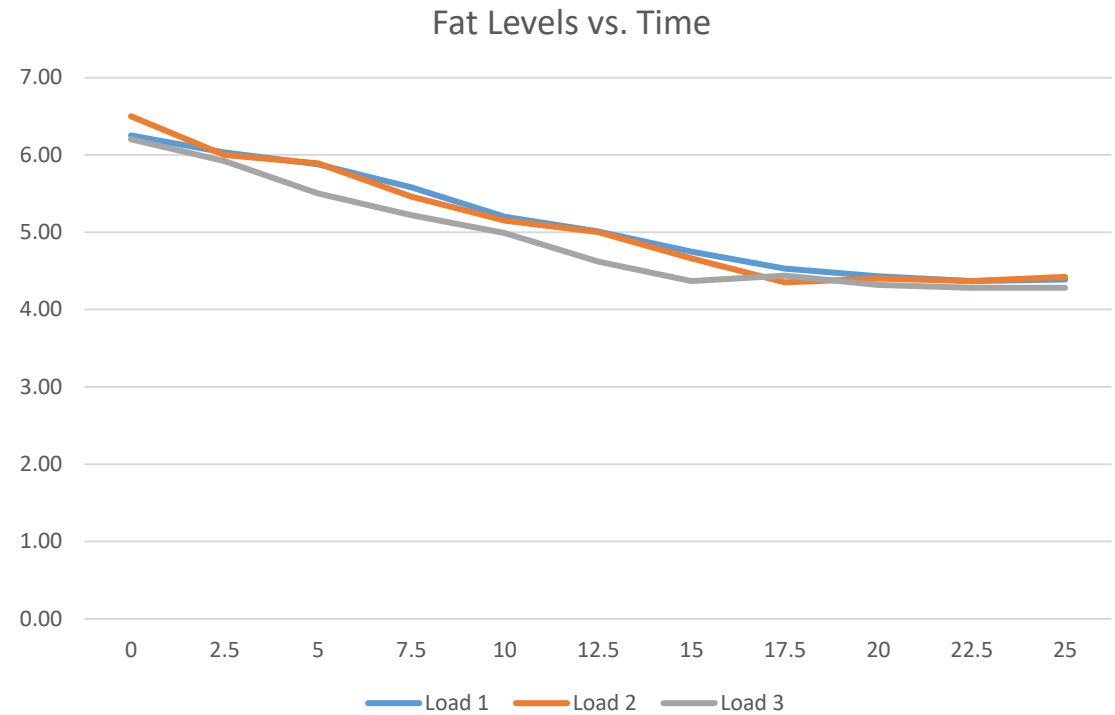
Time	Load 1	Load 2	Load 3
0	2.59	2.60	2.76
2.5	2.98	2.78	3.00
5	3.25	3.04	3.27
7.5	3.40	3.28	3.33
10	3.56	3.49	3.50
12.5	3.77	3.79	3.83
15	3.82	3.95	3.83
17.5	3.90	4.03	4.00
20	3.98	4.00	4.10
22.5	4.10	4.10	4.15
25	4.06	4.10	4.08





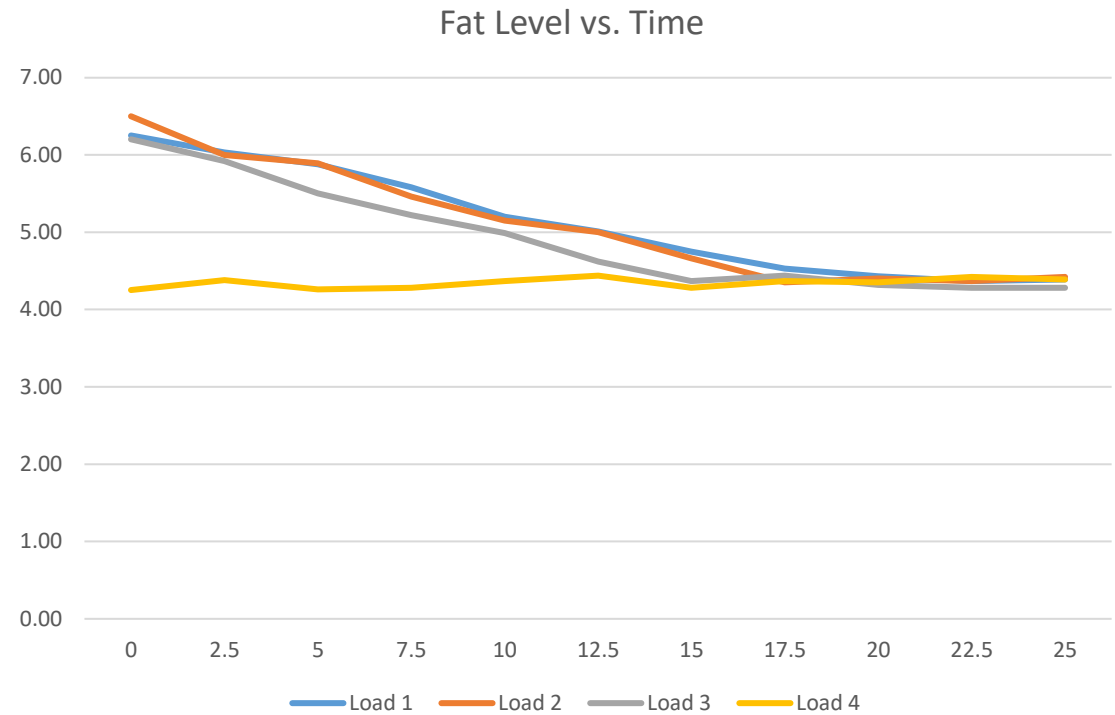
# EXAMPLES

Time	Load 1/ 0 mi.	Load 2/ 0 mi.	Load 3/ 9 mi.
0	6.25	6.50	6.20
2.5	6.03	6.00	5.92
5	5.88	5.89	5.50
7.5	5.58	5.46	5.22
10	5.20	5.15	4.99
12.5	5.01	5.00	4.62
15	4.75	4.66	4.37
17.5	4.53	4.35	4.44
20	4.43	4.40	4.32
22.5	4.37	4.37	4.28
25	4.39	4.42	4.28



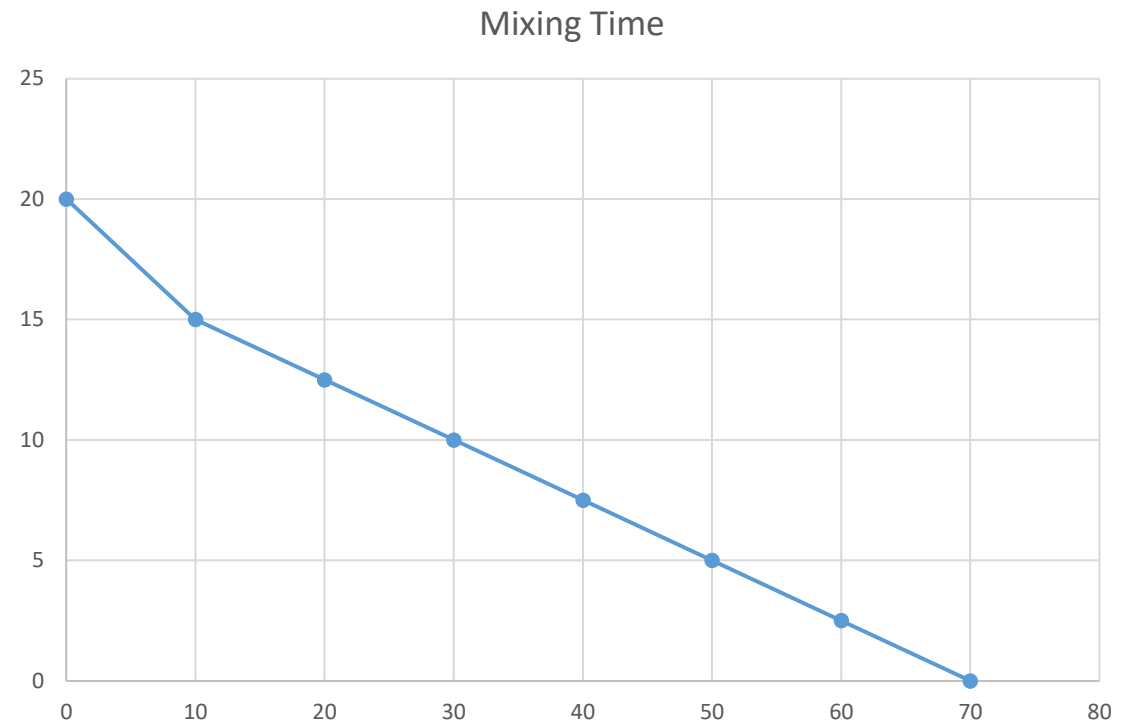
# EXAMPLES – DO NOT MIX SCENARIOS

Time	Load 1/ 0	Load 2/ 0	Load 3/ 9	Load 4/ 70
0	6.25	6.50	6.20	4.25
2.5	6.03	6.00	5.92	4.38
5	5.88	5.89	5.50	4.26
7.5	5.58	5.46	5.22	4.28
10	5.20	5.15	4.99	4.37
12.5	5.01	5.00	4.62	4.44
15	4.75	4.66	4.37	4.28
17.5	4.53	4.35	4.44	4.37
20	4.43	4.40	4.32	4.35
22.5	4.37	4.37	4.28	4.42
25	4.39	4.42	4.28	4.39



# HOW TO HANDLE DIFFERENT SCENARIOS

Miles traveled	Mixing Time
0	20
10	15
20	12.5
30	10
40	7.5
50	5
60	2.5
70	0





# THINGS TO REMEMBER

- This is your study
  - Each situation is unique, so we can't give you “canned answers.”
  - Make sure you address your worst case scenario.
  - Make sure you start at “zero time.”
  - Make sure fat level stabilizes.
  - We are willing to help you think through your unique situation.





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