

**MILK COMPONENT VARIATIONS: DHI vs. your plant results.**

Milk component variations can sometimes occur when comparing DHI data and components for payment. Variations may occur even when looking at a typical herd without comparing another test such as DHI against the payment data. There are many reasons that contribute to variations in components, and causes may be inconclusive.

Day to day fat variations of plus or minus .4 percent or greater may occur. If the DHI fat percentage is high on test day while a payment test is taken on a low fat day the variation can be significant. This can cause a difference of .3 percent with greater variations to be expected.

Many changes occur on the dairy during the month, and these changes impact milk components. For example, changes in the number of early and late lactation animals may result in component changes. Early lactation animals will generally show a decline in fat as the milk volume increases for several months and then show a gradual increase to the end of their lactation. Feeding changes, especially in spring and fall can change milk components. Seasonal changes, heat and humidity, milking practices, nutrition, proper tank agitation, and a host of other management practices, as well as environmental factors also contribute to variations.

When noticeable variations occur there are a few questions that should be addressed whether one is comparing their DHI test with the payment test or just comparing the payment tests through the month.

1. Was the same milk sampled? If not, how many days were there between tests? Fat varies from day to day and there is little chance of obtaining identical results from milk obtained on a different day. A DHI tank sample is often taken as a comparison between the average of the cows and the bulk tank. Differences between the two results could indicate improper tank agitation, a problem in sample handling, or a laboratory analyzer problem that was not detected.
2. When comparing two tank samples taken on the same day were the samples obtained from splitting a larger sample or were two separate samples obtained from the tank? Are proper procedures followed? Taking two separate samples from the bulk tank does not guarantee identical results. It is best to take a pint of milk from the tank, agitate it, and then pour off two samples.
3. Who took the sample? The only "official" sample is the one obtained by a licensed and certified individual who is properly trained to obtain them.
4. When comparing the individual cows in a herd what type of test are you on? Today, the majority of dairy producers on DHI are on an AM/PM testing program where the AM and PM milking are alternated every month. Depending on the milking interval the PM milk will generate less milk but a greater fat test while the AM milking is the opposite. Are there 1, 2, 3, or 4 milkings in the tank that was sampled? The number of milkings and tank pickup time will also affect results.
5. Did the regular person sample the tank or cows? Changes in sample takers or someone new in the barn can influence milk

components and production.

6. What type of metering or sampling device is used? Insufficient agitation can result in an incorrect sample being taken, even with bulk tank milk.
7. Does it take you longer to milk on test day? The highest fat percentage is obtained from the last of the cow's milk and you may be spending more time milking to obtain this high fat milk.
8. Are all of the cows going into the tank? It does not take too many high producing cows to change milk component averages including somatic cell counts. This is particularly true in smaller or averaged sized herds.

In general, comparing DHI and plant tests will show similar results. Understanding the above information will help explain test variations if and when they do occur.



*(image is from the milk lab at Dairy One, State College, PA)*

***Please contact one of the laboratory managers below if you have questions or would like more information.***

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**MILK CULTURING SERVICE AVAILABLE TO NEW YOUR DAIRY PRODUCERS**

Dairy One and Cornell Quality Milk Promotion Services (QMPS) collaborate on a joint venture which offers New York producers an additional way to monitor udder health on test day. The program combines the resources of the Somatic Cell Count (SCC) program from Dairy One, and the bacterial culturing and knowledge base of QMPS. Producers can select individual cows or individual quarters of cows based on SCC data and herd history. This milk culturing service offers producers a way to identify the pathogens involved in chronically high SCC subclinical mastitis, as well as clinical mastitis. Dairy One Farm Service Technicians are also trained to take bulk tank culture samples for routine herd monitoring.

On the farm, on test day, the Dairy One technician takes separate sterile culture samples from previously identified cows. The technician sends those samples to the Dairy One center along with the regular test day samples. At the laboratory, the culture samples are analyzed to help identify various bacterial pathogens based on the type of culture test selected. Culture results are available within 3 business days from the time the samples arrive at the lab. Additionally, results can be mailed, faxed or emailed to the producer's veterinary service at no extra charge. Results are sent back in

a report format similar to the one below and include a comprehensive letter describing the pathogens found.

An aerobic sample tests for all the pathogens listed below except Mycoplasma (Mycoplasma testing is an additional charge). Each aerobic sample is \$8.00.

**TABLE 1: Sample Quality Milk Culture Report**

ID #	Barn	Result	Description
1051	Gold	2, 4, 11	Strep. species, Staph. species, G-bacillus
1013	Galant	2, 3, 11	Strep. species, Staph. aureus, G-bacillus
1005	Celebrate	3, 6	Staph Aureus, Klebsiella
0	GrSlam	7, 27	Pseudomonas, C. species
0	Jazz	2, 4, 11	Strep. species, Staph. species, G-bacillus

**Pathogen List**

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|---------------------|---------------------|
| 1. Strep agalactiae | 16. A.pyogenes      |
| 2. Strep species    | 17. C. bovis        |
| 3. Staph. Aureus    | 18. G+ Bacillus     |
| 4. Staph. Species   | 20. Contamination   |
| 5. E. Coli          | 21. Mycoplasma      |
| 6. Klebsiella       | 23. Fungus          |
| 7. Pseudomonas      | 26. C. ulcerans     |
| 8. Pasteurella      | 27. C. species      |
| 9. Proteus          | 28. Enterobacter    |
| 10. Serratia        | 29. Citrobacter     |
| 11. G-bacillus      | 30. Strep group "G" |
| 12. Yeast           | 32. Strep group "C" |
| 13. Mold            | 33. Other           |
| 14. Nocardia        | 50. No Imp Growth   |
| 15. Prototheca      |                     |

**All New York based Dairy One technicians are trained to take culture samples. If you would like more information about this service, contact the Dairy One main office in Ithaca, New York (1.800.496.3344 or e-mail: [dmr@dairyone.com](mailto:dmr@dairyone.com)).**