

Dan Sheldon has learned how to plate and read culture results on his farm in Salem, New York.



Udder prep and looking for clinical signs is an important part of the culturing process. Woody Hill farm also cultures all dry cows and all fresh cows.

### Dairy One web-site offers lots of information

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## On-farm Culturing

Woody Hill Farm owner Dan Sheldon has begun the process of culturing his cows and plating the cultures on his 1000 cow dairy in Salem, New York. We recently asked him about the process.

**Q: What prompted you to begin culturing on the farm, rather than sending the culture samples out to Quality Milk Promotional Services (QMPS) or Dairy One?**

**A:** *Our main reasons were, cost, turn around time, and the fact that we like to do things ourselves when we can.*

*Our vet, Dr. Bob Ceglowski wanted us to start culturing to find out what bugs we had causing mastitis. We also wanted a fast turn around time to begin treatment of animals that had a treatable staph or strep. We started with tri-plates and downloaded the publication from QMPS to learn how to read the plates.*

*Another goal we had was to find out what was contributing to a rise in SCC in the herd. We sampled about 100 cows that had consecutive LS>4 and new LS>4 for a couple of test days. I plated these on blood plates and, with help from the staff at the QMPS lab at Cobleskill Jenni Cary (my neice and next generation partner) and I learned how to confidently read them and what tests to run to confirm the type of bacteria present. We determined that most of the SCC problem is caused by environmental bugs and are working to correct conditions in the barn and milking parlor.*

**Q: Can you describe the process when you see a cow that needs to be cultured? For example, you take the sample, plate it, determine the organism, determine the treatment?**

**A:** *Cows are fore-stripped and any with clinical signs are sampled and held out for treatment or until they clear up. It takes 24 hours for enough growth to take place to be read.*

*We typically culture 5-10 cows per week. We are also sampling dry cows and fresh cows to screen for staph aureus.*

**Q: What kind of organisms do you test for?**

**A:** *Gram negatives (ecoli, Klebsiella) and gram positives (strep and staph).*

**Q: How do you determine the type of organism? What are the most common organisms?**

**A:** *Tri-plates contain three types of growth media that sort out the type of organisms. The most common bugs are Gram negatives - e coli and Klebsiella Gram positives - CNSstaph, strep species, and staph aureus.*

**Q: Was it difficult to learn how to read the plates?**

**A:** *No, the tri-plates make it easy to learn. However, we have now switched to using blood plates that do not sort out types of bacteria but we had to learn what their growth characteristics look like on the plates. The advantage is cost. We can plate a cow sample on a blood plate for nearly one tenth the cost of a tri-plate. The trade off is the learning curve reading the blood plates.*

**Q: Do you have your own mini lab set up? Incubator? Microscope?**

**A:** *We have a walk in incubator that is our boiler room where the furnace for hot water is. In the winter we have used chick incubators in the room to even out the temperature fluctuations. I still need to acquire a microscope.*

**Q: Do you feel this is something other mid-large sized dairies would or should consider doing?**

**A:** *This can be done by anyone with the motivation to learn the microbiology involved and the time to follow through with the results.*



# Dairy One NEWS

Where Information Creates Opportunity

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## Current Events

**April 22nd and 23rd**  
Tri-State Dairy Nutrition Conference at Grand Wayne Center; Fort Wayne, Indiana

**August 5th thru 7th**  
Empire Farm Days at Rodman Lott & Sons Farms; Rt. 414 in Seneca Falls

**August 19th thru 21st**  
Ag-Progress Days at Penn State's College of Agricultural Sciences; Rock Springs, PA

For further information visit our website at [www.dairyone.com/](http://www.dairyone.com/) Current Events

## From the desk of Jamie Zimmerman, General Manager

2007 turned out to be a record year in the dairy industry in many respects. We saw record high milk prices helping dairy producers to regroup following two years of very poor economics. We also saw feed, fuel, and input prices hit historic highs. As we head into 2008 the pressure on farm margins will continue even as we experience what will be considered strong milk pricing by historic standards. Please look to Dairy One to provide the production management information that is critical to your operation to make sound decisions – herd and cow information (DHIA), and analysis of feeds, manure, water, soil, and milk. Additionally, the tools needed to make sense of the information are provided by Dairy One through traditional reports and software products used by our employees or on the farm.

Dairy One completed 2007 with strong financial results fueled by increased DHIA testing numbers and record laboratory tests. 2008 has begun very well and we are optimistic that we will experience another strong year of bringing valued services to our members and customers.

Farmland Environmental, our newest venture, has been operating two pilot projects in New York and Pennsylvania to provide farmers with Comprehensive Nutrient Management Plans (CNMPs) with most of the funding for plan development coming through state NRCS offices. During 2008 you will be hearing more about how Farmland Environmental will be working with farmers and their advisors to aid in agronomy and nutrient management planning. The goals of Farmland Environmental are to help farms **organize** their crop and nutrient management records, **optimize** the use of farm manure and purchased fertilizers, and **control** environmental compliance and records.

The Dairy One forage lab has begun developing “affiliated” laboratories outside of the northeast. Through the use of the internet and new NIR technology we are able to provide cattle nutritionist with the same analysis results as if a sample was sent to our Ithaca lab. Farmers and nutritionist in the area receive quicker turn around of sample analysis so that rations can be adjusted more quickly. Costs are reduced from samples not being shipped to Ithaca. Our first affiliate lab is located in Twin Falls Idaho with a nutrition consulting firm. We expect to have five affiliated labs operational by the end of 2008.

In this issue of the Dairy One News you will see articles on our soil lab, on-farm milk culturing, and how one of our top technicians provides targeted information to the farms he serves. Routine soil analysis is critical to making informed decisions on manure and fertilizer application for optimized crop yields. With increased fertilizer prices, the risk of over or under applying crop nutrients will be very expensive. The soil lab offers crop recommendations for New York, Pennsylvania, and Vermont and we will analyze soil samples from anywhere.

There is some great information in this edition of the Dairy One News. Please contact the article authors with follow up questions or consult the Dairy One web site.

We are always interested in your feedback and ideas on how we can serve you better. Please let any Dairy One employee know or e-mail me directly at [jamie.zimmerman@dairyone.com](mailto:jamie.zimmerman@dairyone.com)

I hope you have a safe and productive spring.



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## Technician and Farms Work Together to Make Progress

by Jack vanAlmelo, Dairy Management Resources

This list of chronically high Somatic Cell Count cows was developed by technician George Glover and gives farms a list of animals from which they can confidently select problem animals. Once they are confident the animals are a chronic problem, they take actions up to and including selling them.

- Expanded: SHOW ID SCC PSCC PSCC3 PSCC4 PSCC5 DIM MILK RPRO DCC LACT PEN FOR SCC>500 PSCC>500 FDAT>0 DDAT=0											
- Example ————— Dairy One ————— 2/ 2/08—											
ID	SCC	PSCC	PSCC3	PSCC4	PSCC5	DIM	MILK	RPRO	DCC	LACT	PEN
9	1131	746	1493	746	2425	468	72	BRED	0	4	4
46	566	1056	0	460	283	155	95	PREG	87	3	4
105	9052	696	4851	200	214	175	85	PREG	109	2	10
243	2986	1393	2786	1393	492	337	73	BRED	0	1	1
255	919	1213	696	919	429	279	74	BRED	0	1	6
344	606	5199	13	23	15	236	80	BRED	0	1	1
2405	2786	2986	1131	2111	528	166	93	BRED	0	4	4
2446	606	9999	4223	650	0	125	72	OK/OPEN	0	4	1
2447	746	3940	230	13	25	173	111	BRED	0	4	2
2640	1715	746	283	162	100	229	120	BRED	0	3	2
2653	1393	4851	20	115	22	253	83	OK/OPEN	0	3	1
2806	985	566	373	857	857	486	48	PREG	132	2	1

Animal ID | SCC for the last 5 months | Days in Milk | Current Milk weight | Reproductive Status | Days Carried Calve (Days Pregnant) | Lactation Number | Pen

This report is restricted to animals that have had a high SCC count for the last two months. George varies the selection criteria with the farm. "I like to keep the list manageable; not overwhelming with too many animals, yet enough animals that the farm can make progress". Some times he uses a cut of 500,000 and sometimes 300,000.

George Glover is a DHI Technician with Dairy One in Cayuga County, New York. He regularly works with 26 herds that represent more than 12,000 cows. While he has a quiet spoken manner, you do not need to talk with George for long before you realize he is certain he works for some of the best dairies in the Northeast, if not the US. He enjoys his work and takes a lot of interest and pride in his farms' successes. He listens to what they are trying to do, and then tries to figure out how he can help.

While all of George's farms use Somatic Cell information, he learned the information may not be in a form that helps them apply it confidently. "Some time back, one of my customers asked how he could easily see more than just the last two month's SCC for each cow. I created a list in my Technician Dairy Comp, with the last 5 months SCC for cows that had high SCC counts the last two months. He really liked the list and asked me to put it on the farm's Dairy Comp". The dairyman said something like, "two month's high SCC is a pretty good indicator the cow is a problem, but the third, fourth, and fifth months nail the coffin". They use the list to identify animals they can be confident are chronic problems. That confidence helps them be aggressive in taking action. Since George saw the success of this one farm substantially lowering their SCC, he has been introducing all his farms to the report, and setting it up in their farms' Dairy Comp. George is quick to stress, "These are very good farms to begin with but some of them who had been working very hard to keep their tank below 200,000 are now pushing below 150,000 consistently and some even below 130,000.

George has watched farms become frustrated with SCC counts as they see animals have a high SCC one month only to cure themselves and have a low count the next time they are sampled. The truly chronic animals are hidden amongst the animals that take care of themselves. Taking the battle to these clearly chronic animals gives farms a firm handle they can grab on to with the confidence to take action. The actions they may take vary from culling, culturing and treating, "blinding a quarter" or marking them Do Not Breed (DNB).

When everything is working on the farm and they have good reproduction and a healthy environment, its not long before they have too many animals for their barns. George has seen farms sell 40 cows, get back on a regular milking schedule have the tank up the next day and substantially lower their SCC. And of course, everyone loves a sparse hospital pen. George is not surprised when one of his members sells a chronically infected animal making more than 90 pounds. "These dairies are just focused on selling a high quality product, and when they see a chronically very high SCC animal, making a lot of milk, that means removing her will make a difference on the tank SCC."

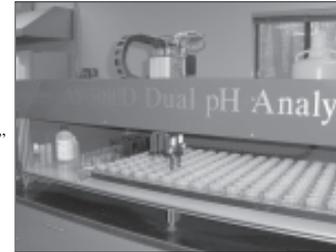
## News from the Dairy One Soils Lab

by Janet B. Fallon, CCA - Forage and Soils Lab Sales Technical Support

By now, most of you have heard about the Dairy One Soils Lab. Our first two seasons have gone very well and like any new venture, there have been a few things we wanted to tweak for optimum turn around time and service.

First, we purchased a pH robot which gave us a big boost in efficiency. It also eliminated the most mind numbing task in the whole process! Next, we made a few adjustments to our drying ovens to reduce turnaround time even further.

By far, the most exciting thing is the purchase of a second ICP. In case you didn't know, that stands for **Inductively Coupled Argon Plasma Spectrophotometer**. At this point you are probably scratching your head and asking, "Huh? Why's that so exciting?" To make a long story short, this machine is used to determine the mineral content of a soil sample. It is the heart of the soil testing process.



Dairy One pH robot in action.

The ICP literally burns the minerals dissolved in the Mehlich 3 extraction solution. Each mineral gives off a unique wavelength as it burns. The intensity of each wavelength is proportional to the concentration of each mineral allowing us to determine the actual nutrient content of the soil compared to standards of a known concentration.

Having a second ICP will allow us to cut 1/2 to 1 full day off our turn around time during the busy spring and fall soil sampling season. This is really important since we also use the ICP to determine the mineral content of forage samples so the ICP can be pretty busy in the fall months when we juggle soil samples and corn silage samples. The second ICP also allows us to "keep on trucking" when one of the units is down for routine maintenance or repairs.

If that isn't exciting enough, we were fortunate enough to find our "gently used" Thermo IRIS Intrepid ICP from a west coast lab that was going out of business so we got a real bargain! It's sort of like the low mileage luxury car found under a tarp in some old ladies garage. Our second ICP should be installed and calibrated well before the spring soil sampling season according to Dairy One Soils Lab Manager, Mark Joyce.

Like most commercial soils labs (& the Penn State Soils Lab), we use a Mehlich 3 procedure for most of our samples. We report the Mehlich 3 results with a calculated Morgan equivalent value for our New York customers. Our Vermont customers will be happy to learn that we are now offering a Modified Morgan test in addition to our routine Mehlich 3 test. This gives them an alternative to sending samples to the University of Maine now that the UVM lab has closed it's doors.

We are working on a few other things including a searchable database that would allow customers to find past soil test results, make changes to crop rotations and generate new recommendations accordingly. We will let you know as soon as that is up and running.

We are still the new kid on the block but we are making huge strides when it comes to meeting our customers soil testing needs and expectations. According to Mark Joyce, we will keep on tweaking.

## Study results favor DHIA records and Dairy Comp 305 herd management software

The USDA National Animal Health Monitoring System (NAHMS) recently published results of their 2007 study on Dairy Cattle Health and Management Practices in the United States. Of interest is the percentage of cows by type of individual animal record-keeping system used for the operation. These results are displayed below:

System	Percent Cows	Standard Error
Hand written, such as a ledger or notebook	54.0	(1.5)
DHIA	48.7	(1.5)
Off-farm computer record system other than DHIA	9.0	(0.9)
On-farm computer record system	56.9	(1.2)
Other system	4.0	(0.6)
Any record-keeping system	98.4	(0.2)

For operations using on- or off-farm computer data record systems, 34.9% used Dairy Comp 305 as their primary system, accounting for 60.3% of cows. "Other" computer programs were used on 30.8% of operations but accounted for only 13.6% of cows. Dairy Quest and Dairy Plan were the most common other computer programs.

Primary System	Percent Operations	Percent Cows
Dairy Comp 305	34.9	60.3
PC DART	19.3	10.2
DHI Plus	15.0	15.9
Other	30.8	13.6
Total	100.0	100.0

USDA National Animal Health Monitoring System  
October 2007