Field Service Update

Field Service Advisory Committee
March 5, 2019

Steven Sievert
Manager, Quality Certification Services Inc.
Technical Director, National DHIA
Chair, ICAR Subcommittee for Recording and Sampling Devices

NATIONAL DHIA
Quality Certification Services Inc.

DHIA-3
(8-54)

RULES GOVERNING TESTING IN DAIRY HERD IMPROVEMENT ASSOCIATIONS

(Revised and Approved by the American Dairy Science Association in June 1954)

1. Standard Testing Equipment

Testing equipment shall conform to the standard set by the American Dairy Science Association. (Complete list of testing equipment in DHIA Supervisor's Manual.)

2. Identification, Feed and Production Data

Owners must make available all registration certificates and other information for proper identification of animals on test and their offspring. They must cooperate and assist the supervisor in obtaining feed weight, roughage quality, freshening and dry dates, purchase and sale dates and any other information needed for calculating complete DHIA records.

3. Identification of Animals

Every dairy animal in DHIA herds must be positively identified and recorded on registry page DHIA–16 of the owner's herd record book within 60 days after entering the herd by birth or purchase. Acceptable identification shall be registration numbers, DHIA, Bangs or vaccination eartag numbers. Tattoo numbers shall be acceptable on purebred animals as temporary identification until the animal enters the milking herd.

4. Lactation Record Reports

DHIA Lactation Record report, DHIA–718, shall be completed and filed for every cow on test for each lactation regardless of whether or not the record is completed. Each lactation record shall be recorded on the respective individual cow record page DHIA–22, in the lactation production summary.

5. Monthly and Yearly Reports

The supervisor shall make monthly and yearly reports as required by the State agricultural college. Yearly feed and production records for each herd shall be reported at the close of the testing year for each herd on Form DHIA–780.

6. Cows To Be Tested

Records shall be kept on all dairy cows that are in the herd on the day the supervisor visits the farm. Every cow that has ever freshened must be included regardless of stage of lactation or ownership. Herds (for listing or publicity purposes) shall consist of five or more cows located on one or more farm units under one management. In case there is more than one farm unit, a composite average for all the units of the herd shall be computed and published as the herd average. Herds not including all cows shall not be considered standard or regular DHIA herds and all monthly and yearly publicity shall be withheld.

7. Monthly and Bimonthly Testing

Associations may operate on the monthly or bimonthly basis, or on both.

8. Number of Cows Tested Daily

The supervisor shall take sufficient time at each milking to properly comply with the following rules: identification of all animals in the DHIA herd including eartagging, cows to be tested, supervision of milking, identification of cows being milked, supervisors use own data, lock sample cases and method of sampling. In addition sufficient time shall be allotted to each herd to complete the herd record book, check it for accuracy and make all required monthly, yearly, and lactation reports. The average number of cows tested per day during the month shall not exceed 35 unless special approval is given by the board of directors.

9. Doubling Herds

It is recommended that as a general rule only one herd be tested in one day.

10. Supervision of Milking

The location of the cows being milked should be such that the supervisor can effectively observe the milking at all times.

11. Identification of Cows Being Milked

The supervisor shall verify the identity of each cow when entered on test by comparing color markings, eartags, and registration certificates, and by recording the information on the individual cow record page DHIA–22. Thereafter at each milking the supervisor must assure himself of the correct identity of each cow as she is milked.

12. Supervisor Uses Own Data

The supervisor shall compute the production records for a testing period from the data obtained on the testing day by a person authorized and approved by the State Extension Dairyman and the responsible organization.

13. Centering the Testing Day

Production records shall be calculated by centering the testing day according to the method outlined in the DHIA Supervisor's Manual.

14. Supervisor's Route

In order that the herd owner may not know the exact day the supervisor will visit a farm, the supervisor shall from time to time vary his visits to each farm as much as 3 days ahead of, or 3 days after, the regular testing day. (Regardless of such variation, however, all calculations should be made on the basis of the regular centering day established for the herd.)

15. Lock Sample Cases

All milk samples and glassware and unrecorded barn book pages shall be kept under lock and key when not under the immediate observation of the supervisor.

16. Method of Sampling

All weighing, sampling, and recording of each milking of each cow for the 24-hour period shall be done by the supervisor. Each cow's milk must be thoroughly mixed immediately before sampling.

17. Lost Samples

If for any reason the sample is spilled or lost and another sample cannot be obtained, the records shall be held open until the following month when the average of the production for the following testing period should be taken as the production for the current testing period.

18. Butterfat Test

The Babcock test is to be used in all dairy herd improvement associations. In applying the Babcock test the official rules adopted by the American Dairy Science Association shall be followed. (Detailed rules in DHIA Supervisor's Manual.)

U. S. GOVERNMENT PRINTING OFFICE 16—60297-3

19. Abnormal Tests

Abnormal high or low records due to causes such as sickness, severe injury, off feed, etc., shall be handled similarly to lost samples. In cases of severe sickness or injury, it is suggested that except for the first month of the lactation a 40 percent change in total fat from the preceding tests shall be considered abnormal.

20. Retests

Owner's Request

If for any reason a herd owner is not satisfied with the test on his herd, he may call for a retest if he is willing to pay for the cost of the retest. (Details on retests in DHIA Supervisor's Manual.)

Automatic and Surprise Retests

Automatic retests and surprise tests may be ordered by the local association board and/or the State official in charge of the Dairy Herd Improvement Association program. Automatic retest and surprise test requirements and procedures established for Herd Improvement Registry (HIR) tests by the Purebred Dairy Cattle Association shall be followed. All costs of the retest or surprise test must be paid by the owner of the cow or herd retested. The cost is to be not more than the prevailing rate schedule in use in the Association.

21. Fresh Cows—Dry Cows

A cow should not be tested until the 7th day after she calves, counting the day of calving as the first day. The first milk weight and sample can be taken on the evening of the 6th day. The record, however, is started on the 4th day after calving, counting the calving day as the first day. Cows freshening after the supervisor's regular visit and before the end of the testing period should be given credit for their production during that period, as calculated on the basis of the results of the next test. Dry cows—the dry date is the first day the cow is not milked.

22. Cows With Mastitis

Cows with garget (mastitis) in one or more quarters shall receive credit for only the production from the good quarters.

23. Aborting Cows or Cows Freshening Without Going Dry

In case a cow aborts while dry, her record shall be figured the same as for a fresh cow. If she aborts while in milk and has carried a calf less than 152 days, her current record shall continue without interruption.

24. Cows Nursing Calves

Cows nursing calves on the testing day should be considered for the time being as dry cows. Feed records are taken as usual and recorded in the herd-record book. No milk samples are to be taken. Milk weights and tests obtained on the first testing day after calves have been removed or the last testing day before calves are put on cows should be used in computing production for the testing periods in which calves were nursed.

Cows nursing calves throughout the year shall be recorded each month as dry cows and shall be included in the monthly and yearly herd averages. They shall be given production credit in the yearly herd average for one-half the average of all their production records made in previous testing years.

General Housekeeping

- **Audit submission options**
  - **QCS FTP site – each organization has a designated folder**
  - **Dropbox – contact QCS for instructions**
  - **Upload all files – Excel, PowerPoint, PDF, Access, Word, etc.**
  - **Two way street – QCS can upload reports, field training presentations, other supporting documentation**

- **On-site audits continue to be more efficient**
  - **Presence of auditor elevates priority to complete audit**
  - **Higher percentage of on-time submissions**
  - **Less follow-up materials and quicker turn around**
  - **Auditor can offer other support – technician or field manager training, local board meetings, milk meter dealer support, etc.**

- **Common ‘occurrences’ with missing documentation**
  - **Computer theft, damage, or other issues**
  - **Lost forms/documents that were never filed or scanned**

National DHIA - Uniform Operating Procedures

- **Last revision was June 28, 2017**
  - **Some affiliates are using older version**
  - **UOP should be provided to all herds – requirement with new or restarted herds as outlined in the auditing guidelines**
  - **PDF of UOP is available on National DHIA and QCS websites**

NATIONAL DAIRY HERD IMPROVEMENT PROGRAM
UNIFORM OPERATING PROCEDURES

Effective June 28, 2017

CODE OF ETHICS

PURPOSE

This *Code of Ethics* provides guidelines for appropriate conduct in the production, collection, and distribution of DHI information for all individuals and organizations involved with these data.

UNETHICAL PRACTICES

A. Impairing the reliability of DHI data.
B. Not cooperating or interfering in the use of the *Uniform Data Collection Procedures* to record DHI data.
C. Intentionally providing inaccurate data or withholding necessary data resulting in misrepresentation of DHI information.
D. Engaging in management practices with the intent of misrepresenting the performance of individual animals and/or the herd. Among these practices, but not limited to, are the movement of animals between herds, influencing the relative performance of herd mates, and/or the selective use of management techniques in an effort to bias DHI data. Management practices on test day should be representative of normal practices used on other days.
E. Permitting the collection of supervised data by a technician with a direct financial or family interest in the herd being tested without notification to and consultation with the field service auditor.
F. Any practice defined as fraudulent or unethical by the Board of Directors of National DHIA.

REMEDY

Any person, corporation, or other entity violating this *Code of Ethics* may be subject to action by an injured party.

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Initial & Follow-Up Training of Field Technicians

- Most field service affiliates meet the minimum

- Training documentation is dated for many organizations
  - No updates to training programs for over a decade
  - Failure to complete follow-up training as outlined in guidelines
  - Need to provide the tools for new field technicians to succeed in their role
  - QCS recognizes variances between affiliates – just document what training you provided

- What support is needed?
  - On-line training modules?
  - Customizable/fillable templates?
  - Other?

Continuing Education for Managers

- Certain field service affiliate managers do not attend any organized training meetings
- Added *Guidelines for Continuing Education of Field Service Managers* - effective January 1, 2016
  - 4 of 24 affiliates failed to meet this requirement in 2016
  - 2 of 23 affiliates failed to meet this requirement in 2017
  - 3 of 25 affiliates failed to meet this requirement in 2018
  - Certification status is conditional or provisional based on other compliance issues associated with the audit
- These issues create increased challenged and increase costs of support
  - Not aware of industry changes (UOP, test plans, calibration procedures)
  - Higher non-compliance issues during field service and meter center audits

Portable Meter Calibration Performance in 2018

** Meters are required to be calibrated at least once every 365 days*

** There were 3 field service providers with 100% of meters with calibration intervals <365d in 2018*

	Best Service Provider	Poorest Service Provider	2017 Weighted Mean	2018 Weighted Mean
Not Calibrated	0%	38.1%	1.1%	2.3%
% <365 days	100%*	0%	54.1%	49.6%
% between 365-425 days	0%	0%	36.7%	33.9%
>425 days	0%	100%	8.1%	14.2%

Electronic Meter Reporting

- **Don't forget to update make, model and number of meters as parlors expand or are remodeled**

- **Common incorrect statements regarding electronic meters**
  - **Set it and forget it attitude regarding meter calibration**
  - **A 10-day average takes care of all individual cow errors**
  - **Parlor report is enough – routine maintenance is not needed or follow-up on deviating meters not required**

- **All test plans are included – even 40's and 70's – just because a herd is on a commercial or unsupervised test plan does not waive electronic meter reporting and calibration requirements**

Calibration of Electronic Meters

- Guidelines require that herds using in-place electronic meters need to have them calibrated at least once every 12 months

- Guidelines offer options for compliance
  - Water Test Calibration
  - Parlor Report/EMMR/Manufacturer's Software Report demonstrating that meters are accurately weighing milk
  - Other procedure approved by the auditor

- Confusion over what is acceptable for AMS (robotic) herds

- New electronic calibration procedures from manufacturers that are not covered in the current guidelines

- This is a growing area for support, compliance and service

Electronic Meter Documentation

New Parlor Performance Report for Bovisync Users

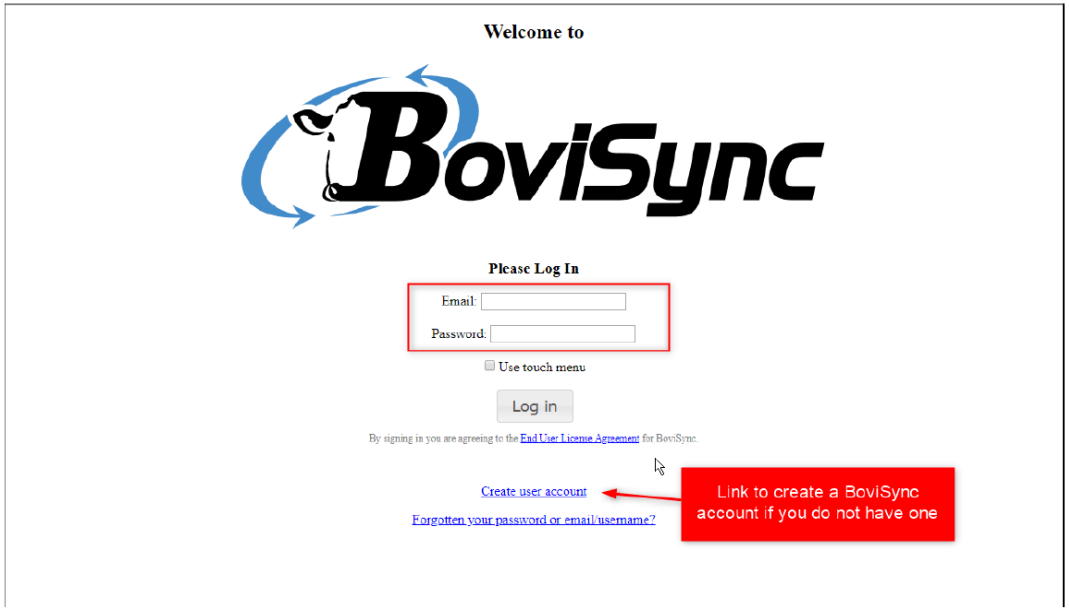
DHIA Compliance Report and Milk Monitoring Report

This KB article will walk through the process of logging into a BoviSync herd, Running the DHIA Compliance and Milk Monitoring Report, exporting the reports, and links for shift specific deviation reports. This report will allow you to calibrate the parlor for compliance.

Logging into a Bovisync herd

First go to Bovisync (click this link).

Once you arrive, enter your user name and password. (If you do not have a BoviSync account, follow the link below the username and password).



Once you are logged in, open the herd that you would like to see the deviations for. Upon your first login to BoviSync you will see the screen below. Select **Open Herd(s)**.

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Electronic Meter Documentation

New Parlor Performance Report from Uniform Agri

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Milking System Monitor

Milking: 31-5-2018 1/1

Milking

Group	#Cows	Milk Total	Total	Time Start	End
1	25	320	2:56	6:06	9:02
2	142	2344	3:37	5:24	9:01
3	139	1843	2:34	6:24	8:58
4	151	1864	3:16	5:54	9:10
5	5	62	1:01	7:36	8:37
8	1	9	0:04	8:30	8:34
Total	463	6442	3:46	5:24	9:10

Look Back

Date	Milking	Time Start	Time Total	Average per Cow Milk	Milk/min	Dur
31-5-2018	1/1	5:24	3:46	13,9	2,9	4,8
30-5-2018	3/3	21:00	2:47	11,4	2,6	4,4
30-5-2018	2/3	13:18	3:23	11,8	2,7	4,4
30-5-2018	1/3	5:24	3:12	13,1	2,8	4,7
29-5-2018	3/3	20:54	3:08	10,4	2,4	4,4
29-5-2018	2/3	13:24	3:22	11,7	2,7	4,4
29-5-2018	1/3	5:24	3:54	14,1	2,9	4,8
28-5-2018	3/3	20:48	3:02	11,4	2,6	4,3
28-5-2018	2/3	13:18	3:28	11,8	2,6	4,5

Cows

Group	#Cows	Milk /Cow	Milk /Hour	Milk /Stall/h	Cows /Hour	Cows /Stall/h	Avg Dur	SPP	DIM
1	25	12,8	160	65,8	9	0,4	4,8	42	30
2	142	16,5	203	54,5	39	1,0	4,9	60	141
3	139	13,3	153	46,3	54	1,3	5,2	54	111
4	151	12,3	172	51,2	46	1,2	4,3	59	264
5	5	12,4	159	41,3	5	1,2	4,7	58	320
8	1	8,9	124	22,2	14	13,9	4,3	0	0
Mean		13,9	175	42,6	122	3,1	4,8	57	168
Total	463								

Stalls

Stall	#Cows	Total	#/Min	/Cow	Mean P/E	Mean Dur
1	11	143	2,8	13,0	99	4,7
2	11	138	2,6	12,5	101	4,8
3	12	171	3,0	14,2	98	4,7
4	12	151	2,8	12,6	95	4,5
5	11	141	2,4	12,8	98	5,4
6	12	165	2,8	13,7	97	4,8
7	12	170	2,8	14,2	101	5,0
8	12	173	2,9	14,4	102	5,1
9	10	129	2,4	12,9	97	5,3
10	12	176	3,3	14,6	101	4,4
11	12	168	3,4	14,0	98	4,2
12	12	166	3,1	13,8	100	4,5
13	11	162	2,7	14,7	100	5,4
14	10	148	3,0	14,8	102	4,9
15	10	147	3,1	14,7	99	4,8
16	10	131	2,8	13,1	104	4,6
17	10	152	3,4	15,2	106	4,5
18	10	139	2,6	13,9	100	5,4
19	10	142	3,0	14,2	100	4,8
20	10	129	2,8	12,9	97	4,6
21	12	158	2,8	13,2	103	4,8
22	13	175	2,8	13,5	99	4,9
23	13	194	3,3	14,9	101	4,5
24	13	194	3,3	14,9	102	4,6
25	13	184	3,0	14,1	97	4,7
26	13	174	3,2	13,4	97	4,2
27	13	172	2,3	13,3	96	5,7
28	13	198	3,3	15,2	107	4,7
29	13	183	2,9	14,0	103	4,9
30	13	194	3,3	14,9	104	4,5
31	12	175	3,1	14,6	103	4,8
32	12	170	3,4	14,1	105	4,1
33	12	159	2,9	13,2	99	4,6
34	11	152	3,2	13,8	104	4,3
35	12	162	2,7	13,5	98	5,0
36	12	158	2,5	13,2	98	5,3
37	12	173	2,6	14,4	104	5,4
38	11	162	3,7	14,7	102	4,0
39	10	137	2,5	13,7	105	5,5
40	10	129	2,7	12,9	100	4,7
Mean	463	6442	2,9	13,9	101	4,8

[P/E = Actual production divided by expected production]

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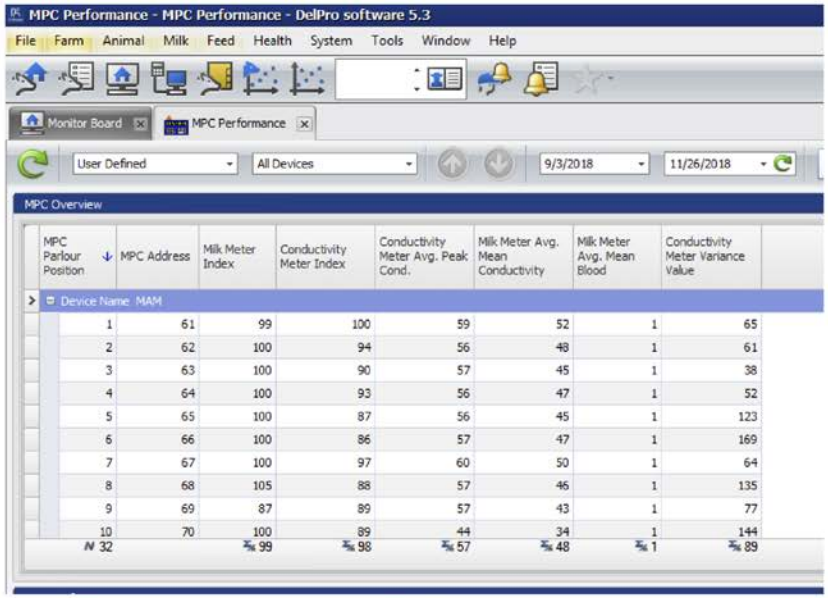
Instructions on Calibrating DeLaval Meters in Delpro

DeLaval

DeLaval MM25, MM27, MM27BC, MM27BC2

Function- Accuracy Check

- System- Service- MPC Performance



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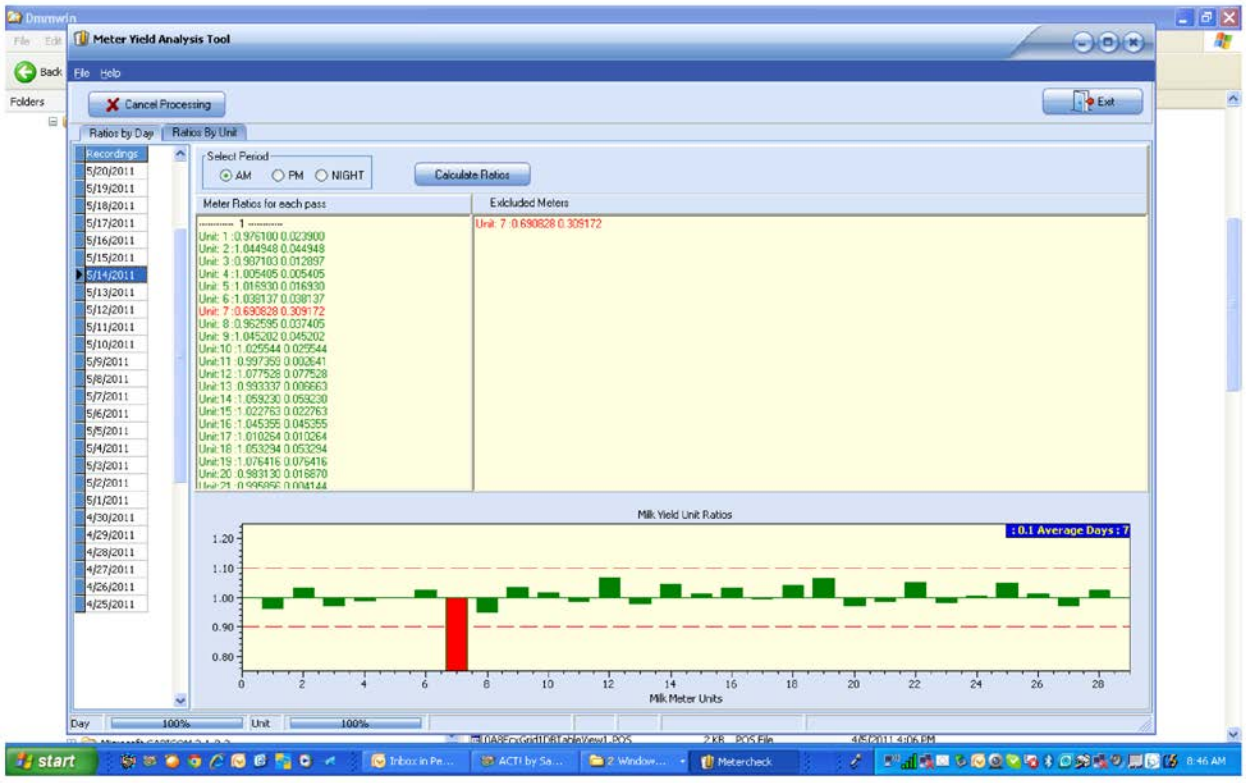
Electronic Meter Documentation

New Parlor Performance Report from Dairymaster



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Annual AMS Calibration Report

Minnesota DHIA

Minnesota Dairy Herd Improvement Association
307 Brighton Avenue South • Buffalo, MN 55313
(763) 682-1091 • Fax (763) 682-1117 • www.mndhia.org

IN-PLACE ELECTRONIC CALIBRATION REPORT—ROBOTIC SYSTEM

According to the National Dairy Herd Improvement Program, Uniform Operating Procedures, producer-owned electronic meters used for DHIA testing must be checked for accuracy by a qualified technician with the same standards used for DHIA meters if the producer wants information to go to USDA. DHIA information is used by USDA for Sire proofs and other genetic evaluations and is required if the dairy is on a young sire program.

- Calibration reports are required on an annual basis with a maximum interval of 14 months.
- Meters must be within 5% of the Expected reading.

Herd Owner_____ Herd Code_____Date_____

Farm Name_____Field Rep Name_____

Address_____Field Rep Number (We will add)_____

City_____ State_____ Zip_____

Robotic Make (Ex Lely)_____ Model (Ex A3)_____

Install Date (if new install) _____ Number of Units_____

Robot Serial #_____
This Robotic Meter has been calibrated as per dealer instructions and is within certified tolerance: _____

Robot Serial #_____
This Robotic Meter has been calibrated as per dealer instructions and is within certified tolerance: _____

Robot Serial #_____
This Robotic Meter has been calibrated as per dealer instructions and is within certified tolerance: _____

Robot Serial #_____
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Robot Serial #_____
This Robotic Meter has been calibrated as per dealer instructions and is within certified tolerance: _____

Robot Serial #_____
This Robotic Meter has been calibrated as per dealer instructions and is within certified tolerance: _____

Signature of person performing test _____

Position _____

Dealership Name_____ City_____

Dealership State _____ Phone _____

Notes or Comments _____

_____

PLEASE MAIL TO: MINNESOTA DHIA, 307 BRIGHTON AVE S, BUFFALO MN 55313
or FAX TO MINNESOTA DHIA: (763) 682-1117 attention Gabe.

ARENTSEN FARM SALES & SERVICE INC

6875 Albers Road, Albers, IL 62215
618-248-5005 618-248-5002 fax

September 10, 2014

To Whom It May Concern:

The Lely A4 Robots at Arentsen Dairy, Serial # 5000613 and Serial # 5000614 were calibrated on September 10, 2014 by our Lely Technician, Patrick Bach.

Sincerely,

Gary Arentsen
President
Arentsen Farm Sales & Service Inc

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QSS Quality Certification Services Inc.

Alternative to Calibration Report for AMS Herds

Robotic Meter Test Day Bulk Tank Differences

brezzy hill [redacted] 14-May 2014

Collection Date	Number of Robots	Collection Time	Actual tank	Tank Volumn	Milk Weight into Tank robot #1	Milk Weight into Tank robot #2	Milk Weight into Tank robot #3	Milk Weight into Tank robot #4	Sum of Daily Milk Weights Measured by the Milk Meter	Deviation %
05/04/14	2			3305	1428	1903			3331	100.79
05/05/14	2			3549	1701	2052			3753	105.75
05/06/14	2			3549	1872	2084			3956	111.47
05/07/14	2			3946	1889	2225			4114	104.26
05/08/14	2			3946	2006	2072			4078	103.35
05/09/14	2			3876	1919	1961			3880	100.10

Measured Yield/Milk Shipped Comparison

- Minimum of 3 consecutive days, 5 days give better results
- Deviation must be ±3% average over evaluation period
- Spreadsheet template available from QCS
- Cannot use EMMR or parlor performance report like PCDART or DC305

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Test Day/Milk Shipped Deviations > 110%

- **Many possibilities for high TD/MS deviations – milking times, meter recording accuracy, group order, equipment modification, etc.**
- **Use of Milkrite impulseAir, Lauren, or Conewango vented inflations is one concern**
- **Changes the milk-air ratio in the cluster/milk line – exceeds the ISO standard for air flow of 30 liters per minute**
- **Tru-Test meters (actually all ICAR-certified meters) are tested and approved to operate within ISO tolerances for air admission**

Preliminary Vented Liner Test Results

- Each brand of vented inflation has different air admission levels but all above ISO specifications
- Lack of consistency (QC) in air admission level within a brand of vented inflation
- Air admission level can be affected by stall location and system vacuum level

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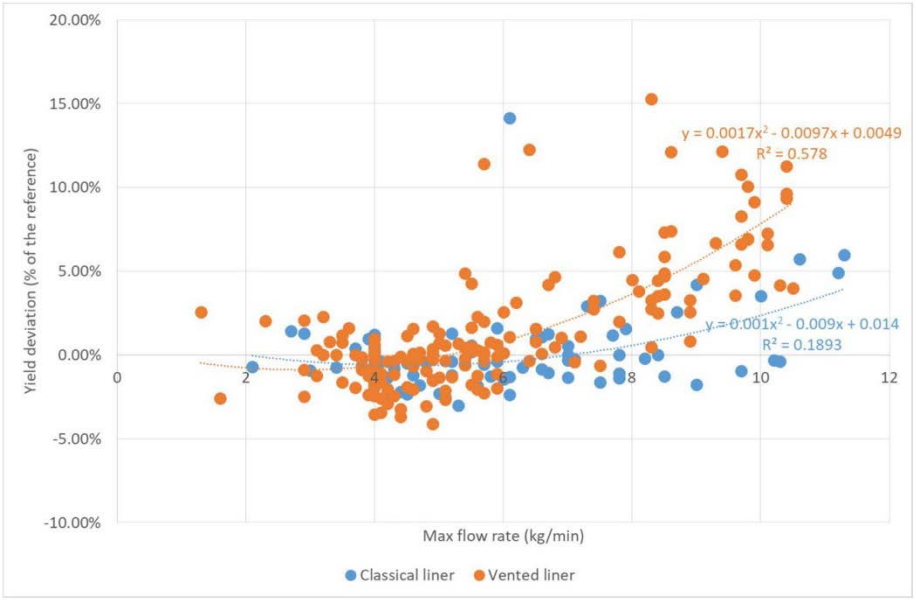
Preliminary Air Admission Test Results

- **Increasing air admission causes over estimation of milk yield in meters tested and certified within ISO levels**
- **The higher the milk flow rate, the greater the overestimation of milk yield**
- **Different devices are affected to different degrees**
- **Concern for management data more than genetic evaluations – decisions on cow management are made in the first 120-150 days of lactation when milk flow is highest**



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Discussion Points on DHI and Vented Inflations

- Adjustment of milk weights at the whole herd level is NOT an option
  - Accuracy is only affected at higher flow levels
  - Low producing cows or slow milking cows are affected at a lesser rate

- Certain systems – DeLaval MM27BC, Afilite MPC, Interpuls MMV – have procedures to compensate for change in air admission
  - Use of these on-farm meters is better choice than using DHI portable meters for milk weight recording

- In addition to overestimating of milk yields, milk samples in some systems are not representative
  - Oversampling of milk at peak flow rates (usually lower in fat & SCC)
  - Foaming of milk due to increased air admission
  - Flooding of subsampler resulting in milk from last portion of milk letdown is not being sampled

- This challenge is across borders and ICAR research continues - National DHIA is engaged in understanding of issue and working together with Canada & Europe to solve these challenges and deliver direction and/or policy.

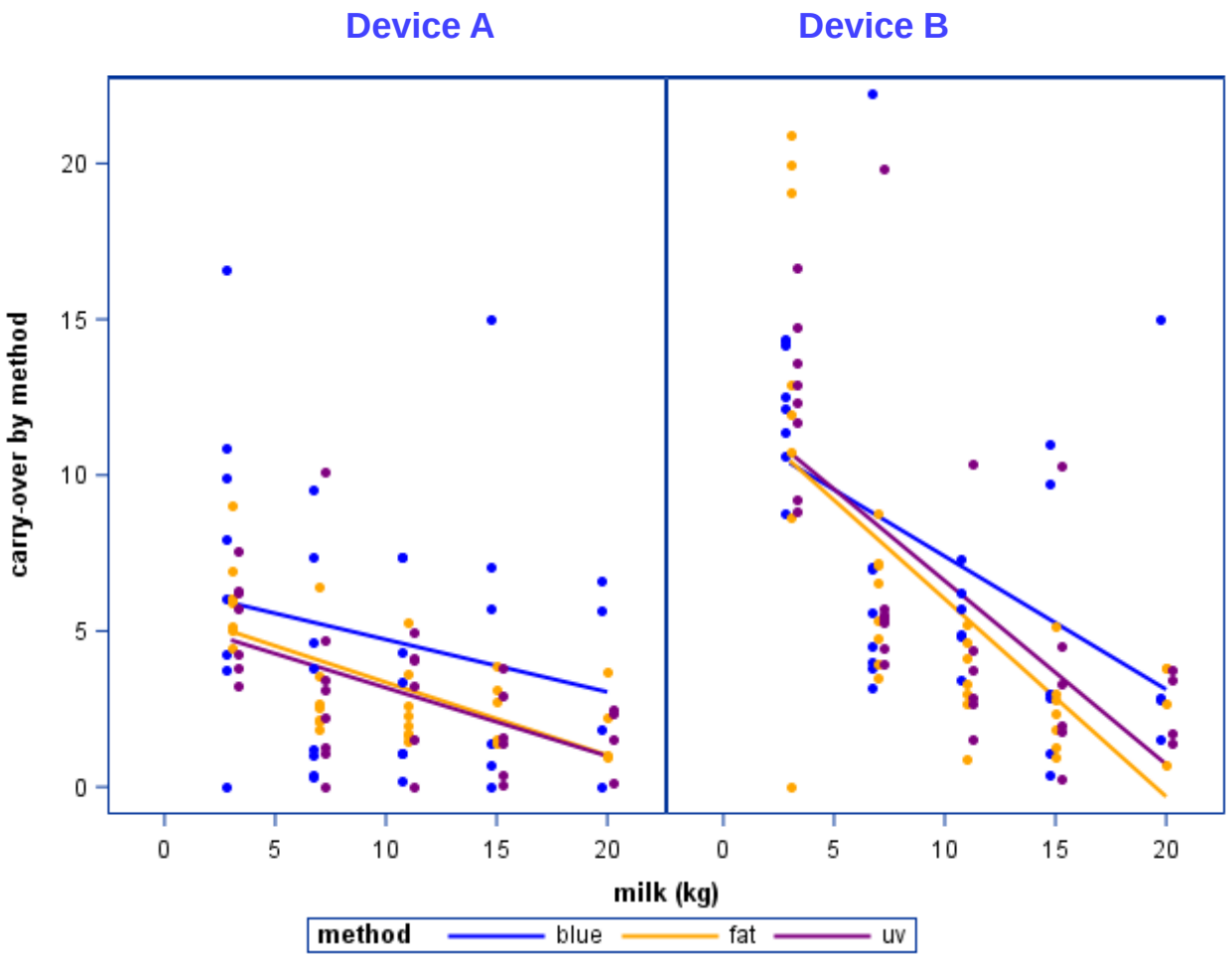
Testing for Carryover in Recording & Sampling Devices

- Recording & Sampling Devices SC commissioned study to develop a ‘standard’ and ‘reproducible’ method
- Comparison of alternative methods for determination
- Experimentation and procedure validation under way

Initial Results from Comparison of Carry-Over Determination Methods

- Carry-over varies between type of device and within a specific devices
- Operational techniques vary between milk recording technicians
- Carry-over is dependent on milk volume but not uniform in its dependency
- Carry-over in AMS more variable due to design, maintenance, and sampling tray

Initial Results from Comparison of Carry-Over Determination Methods



Goals and Next Steps of the RSD-SC on Carry-Over Testing

- ICAR Test Centre workshop to review procedures and determine a standard protocol for carry-over determination
- There would not be specific ICAR guidelines for carry-over level in devices but levels will be reported
- Development of best practices for device usability for milk sampling for specific tests
- DHI organizations must reinforce proper sampling procedures as these are only minimal estimates of carry-over

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