



THE GLOBAL STANDARD
FOR LIVESTOCK DATA

Network. Guidelines. Certification.

ICAR Recording & Sampling Devices Subcommittee (RSD-SC) Update

Field Services Advisory Committee

March 5, 2019

Steven Sievert

*Technical Director, National DHIA/Quality Certification Services. Inc.
Chair, ICAR Subcommittee for Recording and Sampling Devices
Chair, ICAR Sensor Devices Task Force*

Recent ICAR Device Tests – Data Can be Sent to CDCB

Manufacturer	Device	Mounting	Resources Available from National DHIA
Afimilk	MPC	High Line Swing-Over	<ul style="list-style-type: none"> • New Calibration Procedure • New Operator Manual
DeLaval	VMS 300 with DeLaval VMS Sampler	AMS	<ul style="list-style-type: none"> • Operator Manual for VMS and Sampler
Galaxy (Hokofarm)	Galaxy Astrea 20.20 Premium with Ori-Collector	AMS	<ul style="list-style-type: none"> • Calibration Instructions • Operator Manual for Ori-Collector
Lely	A5 with Ori-Collector	AMS	<ul style="list-style-type: none"> • Operator Manual for A5

Planned ICAR Testing – Data Cannot be Sent to CDCB

Manufacturer	Device	Mounting	Anticipated Timeframe * Subject to change based on manufacturer activity
Nedap	Smart Flow with SAC Manual Sampler	Low Line	March 2019
Waikato	EMM with Manual Sampler	Low Line	Summer 2019 (delayed twice)
GEA	Monobox	AMS	Delayed for poor results – restart planned June 2019
SAC	IDC 3 IDC 3b	High Line Low Line	Spring 2019 – delayed due to redesign of controller
Boumatic	Smart Flo with Perfection Sampler	High Line Low Line Goats/Sheep Swing-Over	Summer 2019 – concern over stability of components and changes in algorithms in software
Elcabe	ARGI	Sheep	February 2019
DeLaval	VMS 300 with Ori-Collector	AMS	Q2 2019 – may be delayed due to issues in mixing of milk when in combination with Ori-Collector. Also want to make sure test includes V300 with Herd Navigator
GEA	Dairy Pro Q with Turn & Mix Sampler	Rotary Robot	Q2 2019 – Issues remain with carryover and quarter flow of milk

Planned ICAR Testing – Data Cannot be Sent to CDCB

Manufacturer	Device	Mounting	Anticipated Timeframe * Subject to change based on manufacturer activity
Boumatic	SR1 & DR1with Ori-Collector	AMS	Target is Late Fall 2019 – which AMS version
DeLaval	<i>New Goat & Sheep Meter – Unnamed Model</i>	High Line	Summer 2019
Fullwood	Merlin M2 with Ori-Collector	AMS	Q3/Q4 2019
Afimilk	Afilite with new MPC-N Controller	Low Line High Line	Components for old controller for Afilite meter no longer available – Afimilk is building a new controller based on MPC to communicate with Afilite meters
Waikato	<i>New Mechanical Meter</i>	Low Line High Line Goats Sheep	Delayed – looks promising but zero-tests (internal) do not meet ICAR guidelines

AMS (Robotic) & Sampling Shuttles



- MR-S1, MR-S2
- MR-D1, MR-D2
- **There is no ICAR-certified shuttle with Boumatic robots including the Ori-Collector**
- **Met with Boumatic multiple times on testing – mixed signals on next steps from Boumatic**

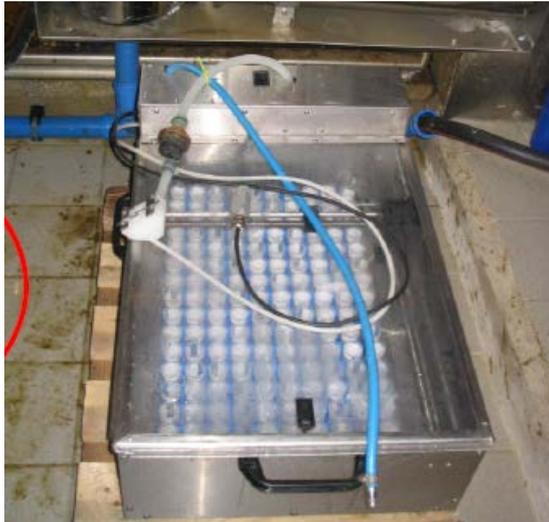


- DeLaval VMS (original)
- DeLaval VMS 2007
- DeLaval VMS 2010
- DeLaval VMS 2012
- DeLaval V300

- DeLaval VMS Sampler with all models

- Ori-Collector with all but V300 – test planned in 2019 but delayed due to milk mixing when connected to Ori-Collector

- **Changes in VMS in US (DeLaval response to FDA) have raised concerns – ICAR and NDHIA are reviewing at present time**

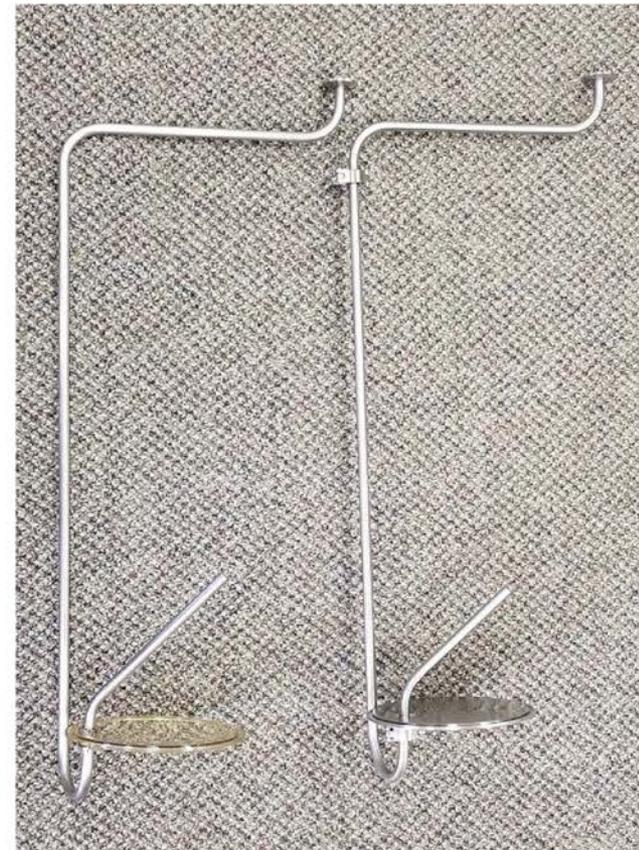




- **Modification of Mix-Pipe by DeLaval**
- **Changes meet FDA and PMO**
- **Certified by ICAR RSD-SC in November 2018**

VMS Mix Pipe Comparison

On the left with the poly cover is the original and on the right is the redesign





- **Galaxy Astrea 20.20 Premium marketed by Galaxy USA**
- **Similar to other models from Hokofarm Group**
 - **SAC Futureline Max**
 - **System Happel TIM**
- **ICAR-Certified with Ori-Collector**

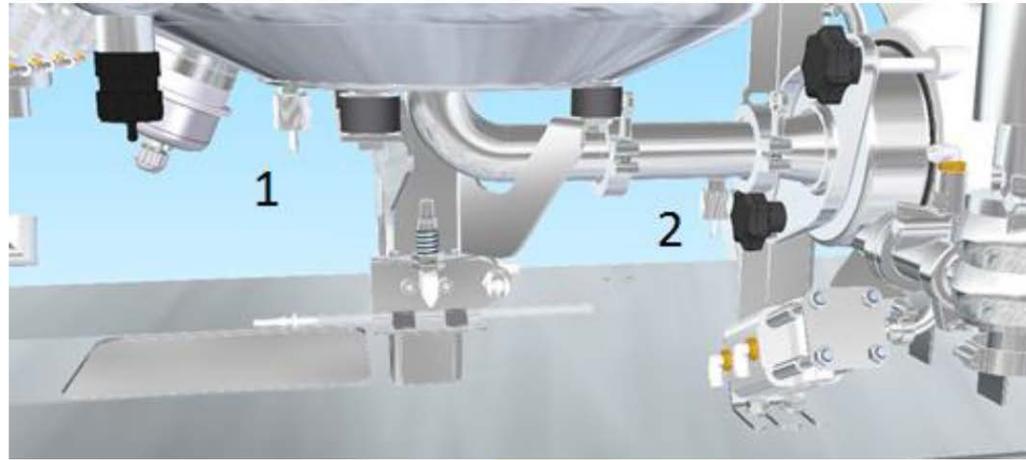


Figure 1 Detail view milk receiver and milk pump for systems built from 2013 or younger. The service pipe between both has a sample connector (2) for ICAR approved sampling. The old connector (1) needs to be trimmed to prevent usage on a later stage.

For systems manufactured from 2011 till 2013 no hardware changes are necessary. The dummy connector placed in the rubber connector can be removed and the sample connector can be placed. The rubber connector is highlighted at place 1 in Figure 2.

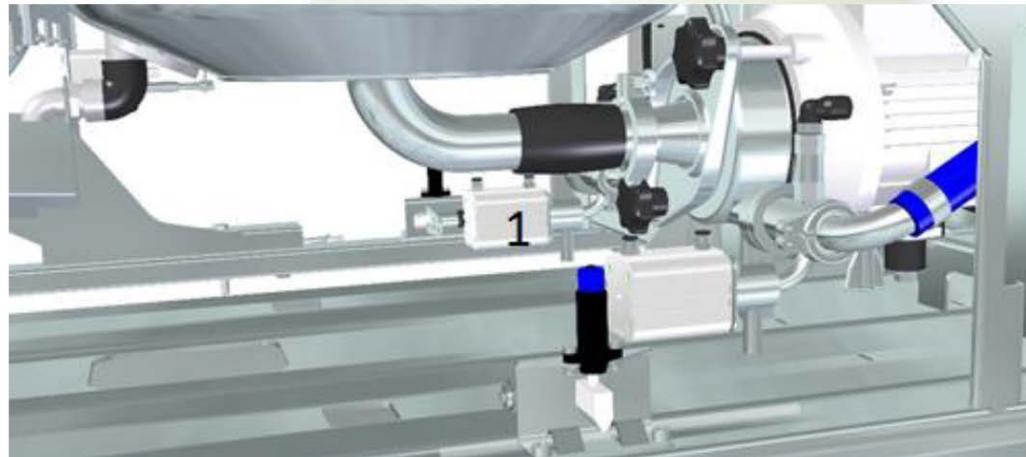


Figure 2 Detail view milk receiver and milk pump for systems built between 2011 till 2013. The sample connector can be placed in the rubber connector between milk receiver and milk pump (1).





Resources Available

- Calibration Manual
- Ori-Collector Manual
- Technical Bulletins

AMS Galaxy USA **Volume 3**
Astrea 20.20 Maintenance Procedures

Milk Meter Calibration	03.19 Revision 0 October 2014 Page 1 of
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Denotes Revision

- PURPOSE**
The purpose of this document is to provide instructions.
- SCOPE**
This procedure applies and shall be used by all technicians.
- SUMMARY**
This can be used as a guide for the service agencies. Under normal circumstances, this can be used as a guide for the service agencies. Under normal circumstances, this can be used as a guide for the service agencies.
- PROCEDURE**
 - To calibrate the milk meter you need to be so it is possible to measure the amount of milk which is shown in the SCU.
 - Gather the following tools:
 - 4.2.1. Calibrated digital scale that measures necessary.
 - 4.2.2. Temporary Hoses
 - 4.2.3. Milker Bucket
 - Put the MCU in "Service" mode.
 - Remove the hose between the milk meter and milker bucket as shown in the diagram and

Dennis Millhoan _____ Br

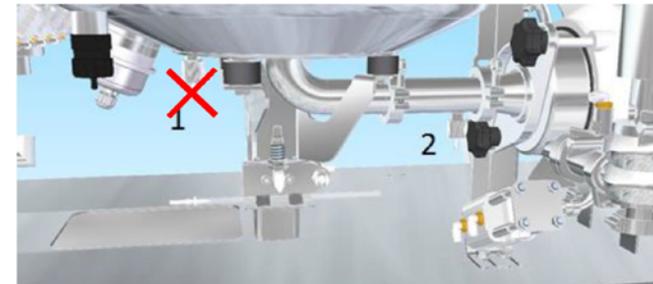
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AMS GALAXY USA **Volume 2**
Astrea 20.20 Operating Procedures

Ori Sampling Rack Setup and Milk Testing	02.12a Revision 0 July, 2018 Page 1 of 15
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Denotes Revision

- PURPOSE**
The purpose of this document is to provide guidelines for getting milk samples with an Ori Collector. The Ori Collector is the only device approved by ICAR for use with the Astrea 20.20 for official milk sampling. The Lely Shuttles can still be used for unofficial sampling (Procedure 02.12). This collector is found to be faster than the sample shuttle and will only cost a small amount of box time. The rack can also hold 90 bottles each and so in the case where cows visit the robot more on Box 1 vs. Box 2, there is ample capacity to accommodate for non-uniform visits.
- SCOPE**
This procedure applies and shall be used by farm owners, AMS Galaxy USA support staff and DHI Testers. ICAR approved sampling is only on systems running RDS software 4.1 or greater, and which have a sampling nipple located in the milk pipe leading to the milk pump (2). Sampling Nipple in the receiver jar (1) are NOT ICAR approved. For more information regarding upgrading to ICAR approved sampling, see appendix.



Bradley Biehl _____

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GEA

MIOne AMS

- Must use the MIOne sampler
- **The Ori-Collector is not certified (failed ICAR test) to work with the MIOne**



Monobox AMS

- **The Monobox is not ICAR-certified – currently working with GEA on testing and approval – test began in October 2019 and aborted due to poor results.**
- **The Ori-Collector has not been tested with the Monobox – no plans for any test with Monobox.**





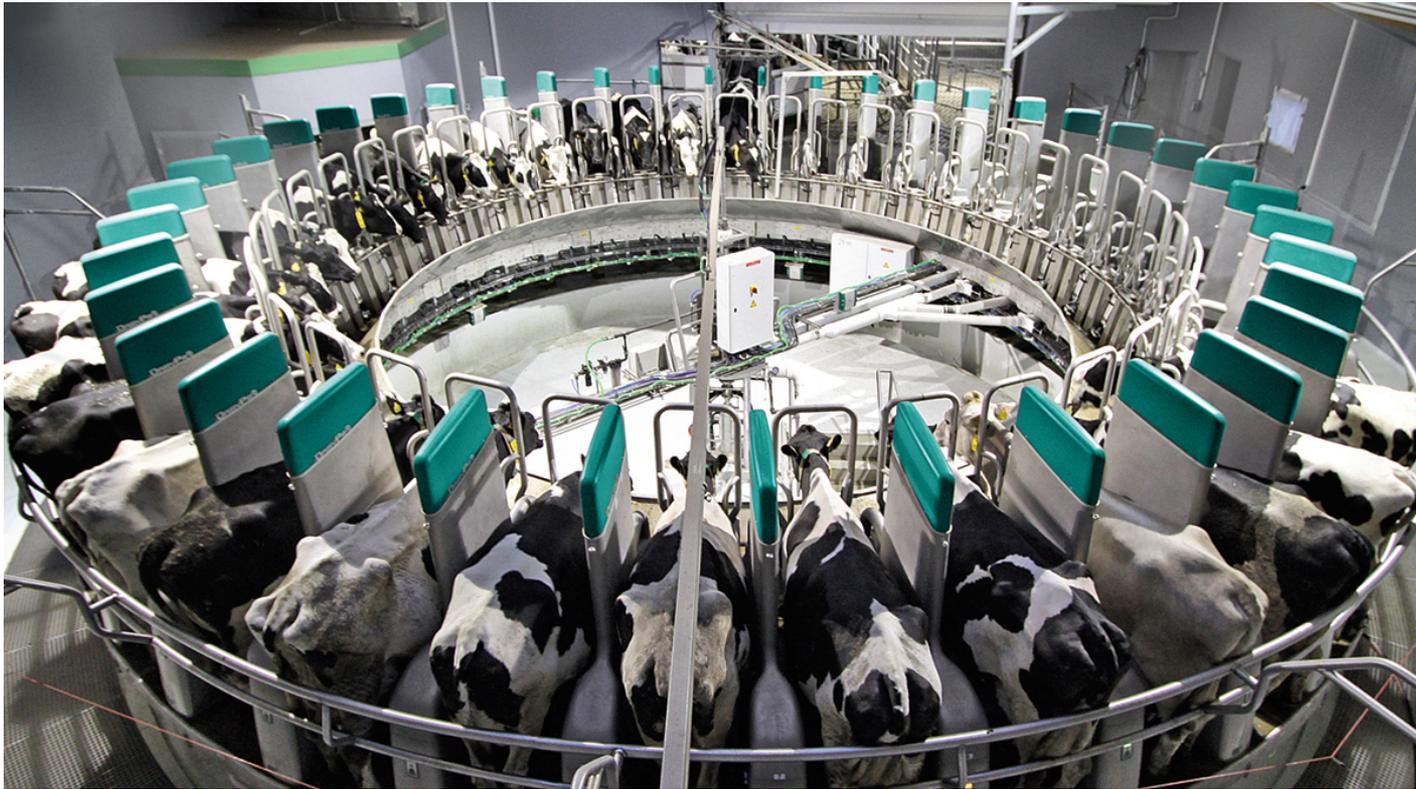
Challenges with Monobox AMS

- The Monobox uses 4 Lactoflow sensors for quarter milk flows and 1 Metatron meter for official DHI milk weight.
- Treated or fresh cows are diverted before the Metatron master meter and do not receive an official DHI milk weight or sample.



Challenges with Monobox AMS

- Sensors that detect abnormal milk from a quarter will divert that milk prior to the Metatron meter (similar to handling of treated cows).
- Resulting milk yield will be incomplete (possibly missing milk from one or more quarters in total milk yield).



Dairy ProQ

GEA

- **System is more conventional but concerns exist – no cluster, sensors like Monobox, and carry-over.**
- **Working with GEA on testing and certification – access to installations, sampler certification, PCB changes all have impact on process.**



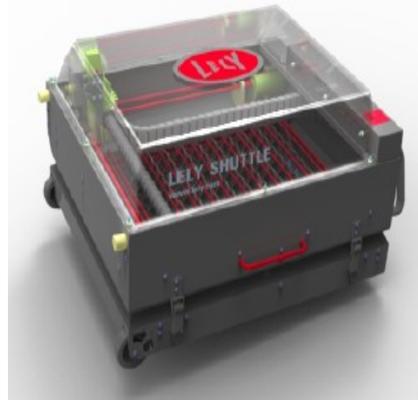
Dairy ProQ

Carry-over when using milk sampler for Metatron meter – approximately 5-8 ml milk from previous cow.





— innovators in agriculture —



- **Certified AMS Models**
 - **Astronaut/Astronaut A2**
 - **A3/A3 Next**
 - **A4**
 - **A5**
- **Certified Shuttles**
 - **Not all shuttles are certified with all Lely AMS Models**
 - **Lely Shuttle A**
 - **Lely Shuttle XY**
 - **Ori-Collector**
- **Modifications required to use Shuttle XY but moot point because not available in US/Canada**



— innovators in agriculture —

Shuttle XY



- Used in Netherlands, Belgium & Luxembourg
- Does not come with sample tray or ability to rack vials
- CRV developed tray with QLIP to meet their needs
- Not a working solution for North America presently
- RSD-SC (Steve) will meet (again) with Lely International but no plans as of February 2019

ICAR-Certified AMS-Sampler Combinations

Updated
2/15/2019

Available on
QCS Website

	Lely Shuttle A	Lely Shuttle XY [Not Available in US/Canada]	Ori-Collector 90	GEA Sampler	DeLaval Milk Sampler
					
Boumatic MR-D1	Not Certified	Not Certified	Not Certified		
Boumatic MR-D2	Not Certified	Not Certified	Not Certified		
Boumatic MR-S1	Not Certified	Not Certified	Not Certified		
Boumatic MR-S2	Not Certified	Not Certified	Not Certified		
Fullwood Merlin	Not Certified	Not Certified	Not Certified		
Fullwood M ² erlin	Not Certified	Not Certified	Not Certified		
GEA MI-One			Not Certified	Certified	
GEA Monobox			Not Certified	Not Certified	
Lely Astronaut	Certified	Not Certified	Not Certified		
Lely A2	Certified	Not Certified	Not Certified		
Lely A3	Not Certified	Certified	Certified		
Lely A3 Next	Not Certified	Certified	Certified		
Lely A4	Not Certified	Certified	Certified		
Lely A5	Not Certified	Certified	Certified		
Galaxy Starline 2007/2009	Not Certified	Not Certified	Not Certified		
Galaxy Astrea 20.20 2011	Not Certified	Certified	Certified		
Galaxy Astrea 20.20 2013	Not Certified	Certified	Certified		
Galaxy Astrea 20.20 Premium	Not Certified	Certified	Certified		
Galaxy Astrea 20.20 Premium FDA	Not Certified	Certified	Certified		
DeLaval VMS			Certified		Certified
DeLaval VMS 2008			Certified		Certified
DeLaval VMS 2010			Certified		Certified
DeLaval VMS 2012			Certified		Certified
DeLaval VMS 300			Not Certified		Certified
Milkomax Roboleo	Not Certified	Not Certified	Not Certified		

Fixed In-Place Electronic Meters & Samplers

afimilk[®]

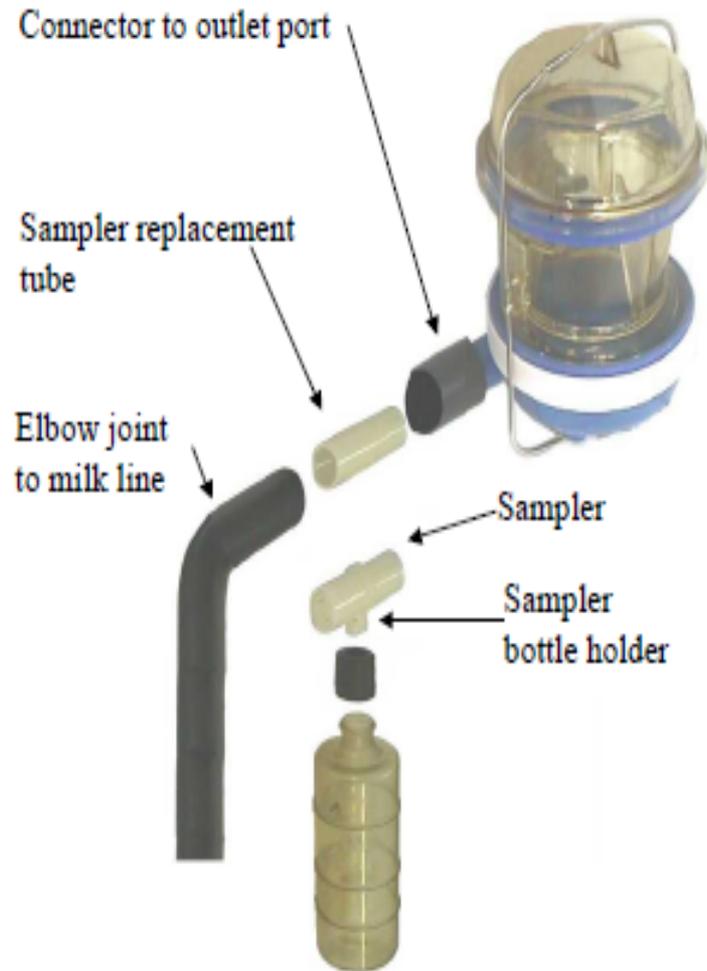
The Heart of the Dairy Farm



- **Approved Models**
 - Afiflo 2000
 - Afiflo 9000
 - Full Flow (MM 85/MM95)
 - Afilite (Germania's Essential)
 - Afilite MPC
 - Afi 155 & 155i (Sheep & Goat)
- **Low-line installation for all models**
- **High-line certification now for Afilite, Afilite MPC, Afi 155/155i**
- **Must Use Afikim Sampler**
- **There is no meter performance report available— must interface with DC305 or PCDART for EMMR**
- **Possible report available at dealer level – QCS met with Afifarm on report in February 2019**

afimilk®

The Heart of the Dairy Farm



- **The Afi 2x Sampler is only certified for use with Afikim meters.**
- **Cannot be used with GEA Metatron, Boumatic Perfection, or DeLaval meters – this includes owner-sampler herds.**
- **Decoupled systems have not been tested and are not certified.**
- **Issues**
 - **Biased results**
 - **Sampler flooding with other meters**
 - **Foaming and flooding with vented inflations (impulseAir, Conewango)**



- **The Ambic sampler is not certified for DHI programs under any conditions including owner-sampler herds.**
- **It has never been ICAR tested.**
- **Appears to be a negative bias for fat in limited testing.**
- **The challenge is the local milking equipment dealers are selling this sampler with on-farm meters instead of the higher-priced ICAR-certified sampler for the respective meter model.**



- The Beco Scan Nexus is not approved for recording of milk weights in DHI programs.
- Is not ICAR-certified.
- It cannot be ICAR tested as they do not have a sampler of their own.
- Option to use another manufacturer's sampler but BECO is not willing to invest in testing and certification at this time.



- **Precision/Precision XL National DHIA approved but was never ICAR tested – now grandfathered and ICAR-certified.**
- **Also known as Model M/M+**
- **Must use the Boumatic Precision Sampler.**
- **Service manual, troubleshooting guides, and calibration instructions are available from QCS.**



AMI 5450/5550



- Automatic Milk Indicator
- Not ICAR tested/certified.
- Will not pass ICAR test – 5-7% bias on milk yield.
- There is no sampler for the system – cannot use another sampler like the Afi 2X sampler.
- Cannot be used for DHI programs at the present time.



Perfection 3000

- Must use Boumatic Perfection Sampler with the meter
- **Some components are no longer available – will have to be retested in near future**
- **New calibration module in software (AQUA) is causing concerns about meters reading low – ICAR is reviewing**
- **Service manual, troubleshooting guides, and calibration instructions are available from QCS.**





SmartControl Meter

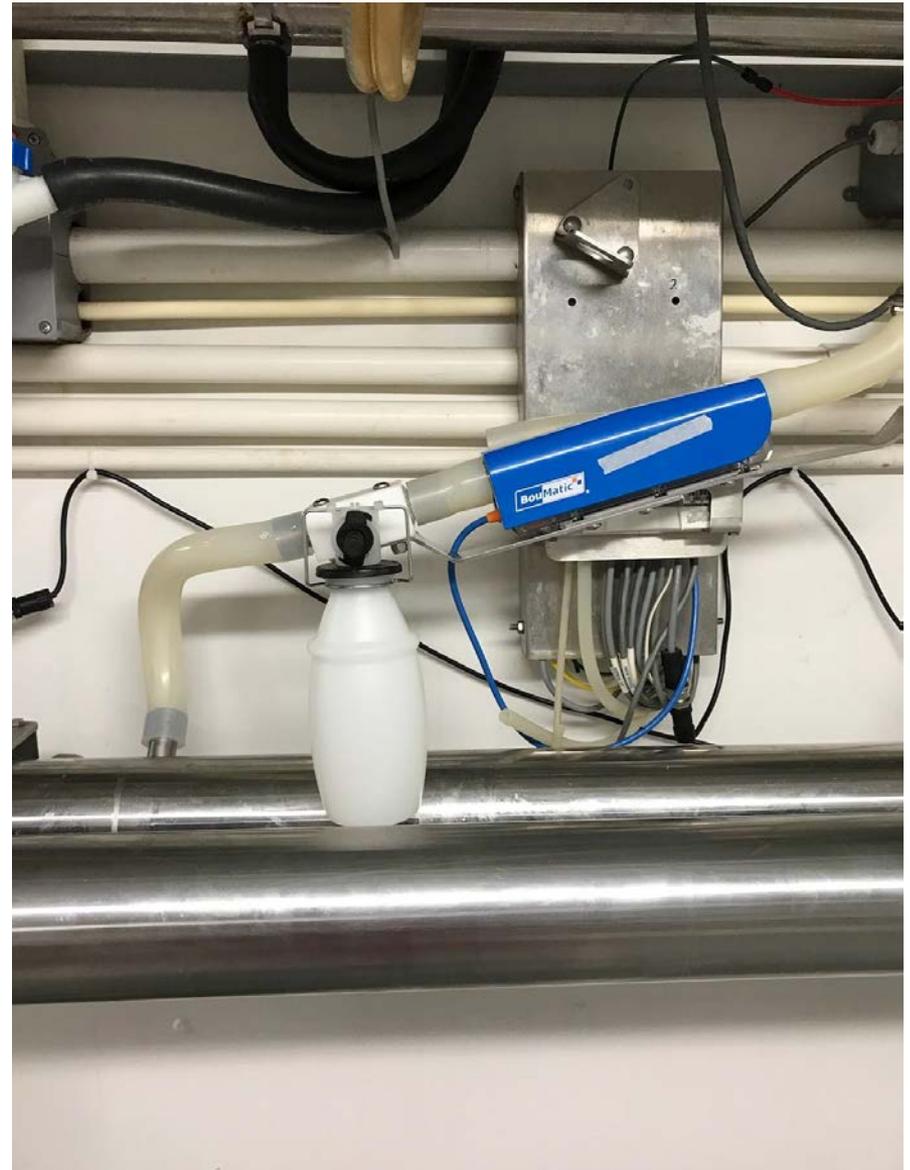
- ICAR-certified
- Must use the Boumatic Perfection Sampler
- **Must retrofit deflector/upgrade software – still not completed in some areas (CA, CO, New England)**
- **Fat is underestimated with old deflector**





New SmartFlo Meter

- **New (free flow) meter being tested on DHI dairy**
- **Appears to use Perfection sampler with modified sampling port**
- **Will be tested in late 2018**
- **Cannot use yield or component data from this device**





ProVantage Parlor Report

DIAMOND S RANCH INC.

MLKG NO. IS 1

18 FEB 09

3:58 PM

ProVantage Prime

Stl	Cows	P/E	Prod	Exp	Time	#Cnd	C/AC	Cond	AvgC	MDet	MMod	RCtr	F120	Data	CIP
1	38	103	38	37	5	37	98	5.9	6.0	0	2	0	7	0	141
2	38	99	38	38	5	38	108	6.7	6.2	0	1	0	10	0	126
3	37	104	38	36	5	36	112	6.9	6.1	1	2	0	8	0	118
4	37	103	37	36	5	36	104	6.4	6.1	0	2	0	9	0	128
5	36	103	39	37	5	36	82	5.0	6.1	0	1	0	8	0	118
6	35	97	36	37	5	35	106	6.4	6.0	1	2	1	8	0	100
7	35	105	38	36	5	34	108	6.6	6.0	1	2	2	8	0	119
8	36	101	36	36	5	36	113	6.7	5.9	0	2	0	8	0	116
9	36	98	37	38	5	35	81	5.1	6.2	0	1	0	8	0	140
10	36	99	38	38	5	36	103	6.3	6.1	0	1	0	8	0	148
11	35	96	38	39	6	35	99	6.2	6.2	0	3	1	8	0	130
12	34	101	39	39	5	33	107	6.8	6.4	0	2	0	7	0	121
13	39	99	36	37	5	38	102	6.4	6.2	0	3	0	8	0	110
14	39	107	37	35	5	38	108	6.6	6.1	2	2	5	8	0	109
15	39	105	38	36	5	38	101	6.1	6.0	0	2	1	8	0	109
16	38	92	35	38	5	38	98	6.0	6.1	0	2	0	7	0	116
17	36	102	37	36	5	35	106	6.6	6.2	0	3	0	8	0	111
1	35	100	37	37	5	34	112	7.2	6.4	0	1	0	8	1	104
19	35	106	37	34	5	35	104	6.6	6.4	1	1	1	8	0	107
20	36	101	36	35	5	35	90	5.5	6.1	1	1	2	7	0	109
21	36	107	41	39	5	36	111	6.8	6.1	0	1	0	9	0	107
22	34	96	34	36	5	33	105	6.7	6.3	2	2	2	9	1	110
23	34	98	39	40	5	34	105	6.5	6.2	0	0	0	9	1	109
24	32	99	38	39	5	32	110	6.9	6.3	0	1	0	9	1	105



SmartDairy

Stall Summary Report
ROTARYBARN
START:2014-05-01 10:05 - STOP:2014-05-01 16:52

SmartDairy

Report On
 Most Recent Shift:
 2013-01-15 00:45
 In Parlor SJ Martin

Select Shift(s) ...

Available Reports	Description
Tables	Tabular Par
Lot Summary Report	3 Tables of a M
Stall Summary Report	Table of Milk Sh
Scheduled Cow Sorts Report	Table of comple
Unassigned Cow Tags Report	Table of Cow T
Cows Milked in Wrong Lot Report	Table of data f
Attaches by Zone Report	Table of Attach
Attaches by Parlor Report	Table of Attach
Reattach Events Report	Table of Re-att
Milking Shift Report	Table of basic c
Cows Expected but Not Read Report	Table of Cows f
Milking Summary Report	Table of 1-line s
All Cows Report	Table of Cows r
Classic Activity Report	Table of Classic
Weekly Production Report	Table of Weekly
Stall Diagnostic Report	Table of Stall Di

STALL	MILK	TOTAL LBS	AVG COND	MANU. MODE	MANUAL DETACH	REATTACH	AVG LBS / MIN 60 120	MAX LBS / MIN 60 120	% OF XPCTD	MIN ATT'D	# WASH DUMPS
1	39	1690.4	6.8	2	7	0	11.7	19.0	101	5.3	131
2	40	1796.8	7.0	1	5	2	12.2	26.0	100	5.2	136
3	40	1808.6	6.9	1	7	7	12.5	29.0	106	5.3	140
4	38	1714.0	6.6	5	10	2	10.5	20.0	101	5.8	79
5	39	1737.8	7.1	4	8	4	12.4	22.0	102	5.2	138
6	40	1738.3	0.0	6	10	10	12.3	24.0	104	5.3	134
7	40	1874.4	7.1	1	4	2	12.3	21.0	106	5.4	139
8	38	1732.4	6.5	1	8	8	11.9	24.0	110	5.5	133
9	36	1671.0	7.1	2	14	9	13.1	24.0	102	5.2	141
10	39	1703.5	5.3	0	3	0	13.3	24.0	102	5.1	149
11	39	1782.0	7.3	3	7	2	11.1	25.0	103	5.7	134
12	39	1726.5	7.0	6	6	7	12.7	21.0	98	5.5	143
13	37	1605.7	7.2	4	8	2	10.0	19.0	99	5.7	154
14	38	1621.7	6.8	2	4	3	11.0	19.0	99	5.4	136
15	40	1864.0	6.9	2	4	2	11.7	25.0	103	5.5	145
16	39	1755.5	7.2	1	6	2	12.4	24.0	107	5.5	140
17	40	1783.4	0.0	0	2	4	11.9	22.0	104	5.3	134
18	38	1726.0	4.0	2	3	2	12.4	24.0	101	5.6	143
19	39	1730.0	4.1	3	5	5	11.3	17.0	101	5.4	150
20	40	1886.3	6.9	2	5	6	13.6	22.0	105	5.2	147
21	38	1674.7	6.0	3	3	4	12.4	25.0	100	5.2	147
22	38	1739.6	0.0	8	18	15	12.1	21.0	110	5.7	144
23	40	1887.6	6.9	0	6	6	14.9	22.0	113	4.8	169
24	40	1561.0	7.1	3	4	3	11.2	19.0	96	5.1	164
25	39	1765.5	7.0	2	7	3	11.1	17.0	101	6.0	163
26	40	1980.3	6.8	4	6	3	12.8	22.0	110	5.7	132
27	38	1616.3	0.0	1	5	5	11.1	21.0	102	5.8	132
28	37	1613.7	7.3	3	4	2	12.4	22.0	101	5.4	135
29	37	1586.9	6.4	3	6	3	11.7	24.0	101	5.6	141
30	39	1726.6	7.1	1	2	2	13.0	22.0	103	5.3	133

reported: 2014-05-15 10:24

© BouMatic



Quality Certification Services Inc.



CURRENT WEIGHALL MILK METER & MILK METER CONTROLLER WITH ICAR APPROVAL.



Weighall Milk Meter

- Both high line and low-line installations are certified at this time .
- Working on new meter performance report with Dairymaster.
- **It appears that Dairymaster changed valve materials and dump cycle but denies any changes.**
- **Met with Dairymaster in February 2019 on routine procedures, reported changes and next steps to retain certification.**



- **Challenges with the Dairymaster subsampler**
- **Mixing of milk is crucial before sampling due to shape of sampler**
 - **10 seconds mixing time**
 - **Complete drainage of sampler**
- **Failure to properly mix subsample can result in overestimating milk fat and SCC values**
- **High carryover potential if sampler is not emptied**



Swiftflo Commander

WEIGHALL MILK METER & NEW SWIFFLO
COMMANDER TOUCH CONTROLLER



- Uses old Weighall meter with a new controller called Swiftflo Commander.
- **Not ICAR-certified.**
- **Met with Dairymaster and with indication that they will apply for ICAR test in 2019.**



Milk Flow Sensor and Swiftflo Commander

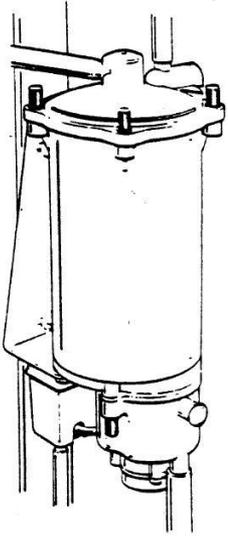
MILK FLOW SENSOR & NEW SWIFFLO COMMANDER TOUCH CONTROLLER



- The combination of the new flow sensor and Swiftflo Commander panel is not ICAR-certified.
- Will not pass ICAR testing with current technology.



- **Approved Models**
 - **Flomaster**
 - **SG (Sheep & Goat)**
 - **MM15 (Flomaster Pro)**
 - **MM25/MM25W/MM27BC**
 - **Delpro MU480/MU486**
- **Must use proper DeLaval sampler for each model**
- **All meters are low-line except for Delpro MU480/MU486**
- **New meter calibration functionality in Delpro software for MM25/MM27BC**





- **Unapproved models – these are flow indicators (FI) that are only in the 5-8% accuracy range**



FI 2



FI 5



MM15 (Flomaster Meter)

- **Must use the correct sampler**
- **Fill and dump meter**
- **Calibration instructions and troubleshooting guides available from QCS**



MM25/MM27BC

- Must use the correct sampler
- Continuous flow sensor meter from SCR that uses combination of infrared and white light
- Reported issues with vented inflations
- Calibration instructions and troubleshooting guides available from QCS



Alpro/Delpro Report for Calibration of MM25/27 Meters

- Can be calibrated every month
- Uses milk shipped weight info
- Presentation from DeLaval in folder explaining procedure.
- Meets ICAR and QCS requirements for meter calibration.

Milk Meter Calibration

MAYER FARMS INC
ALPRO Time: 2:00 09.04.10

Milk Meter Calibration

Current calibration factor: 1.00 Update...
Last calibration date: -

Save the new BIAS values...

MPC Parlour Pos	Relative Yield	Current BIAS	New BIAS	MPC Parlour Pos	Relative Yield	Current BIAS	New BIAS
1	97.16	1000	1029	21	97.87	1000	1021
2	97.43	1000	1026	22	99.39	1000	1006
3	98.57	1000	1014	23	98.73	1000	1012
4	100.00	1000	1000	24	98.48	1000	1015
5	98.17	1000	1018	25	97.63	1000	1024
6	98.42	1000	1016	26	98.80	1000	1012
7	98.49	1000	1015	27	98.79	1000	1012
8	99.78	1000	1002	28	97.61	1000	1024
9	97.86	1000	1021	29	99.23	1000	1007
10	99.50	1000	1005	30	97.88	1000	1021
11	98.08	1000	1019	31	99.02	1000	1009
12	98.71	1000	1013	32	98.25	1000	1017
13	98.85	1000	1011	33	98.66	1000	1013
14	96.90	1000	1031	34	99.12	1000	1008
15	96.89	1000	1032	35	98.50	1000	1015
16	96.07	1000	1040	36	97.99	1000	1020
17	97.59	1000	1024	37	98.80	1000	1012
18	98.77	1000	1012	38	98.77	1000	1012
19	98.31	1000	1017	39	97.36	1000	1027
20	98.84	1000	1011	40	98.69	1000	1013



- **The E-Z Sampler is not approved for DHI programs under any conditions.**
- **Is not ICAR-certified with any meter.**
- **The challenge is the local milking equipment dealers are selling this sampler with on-farm meters instead of higher-priced ICAR approved sampler for the respective meter model.**

Set-Up	# Cows	BF MD	BF SD	Protein MD	Protein SD	SCC MD	SCC SD
EZ Sampler before Boumatic Meter	167	+0.06	0.152	-0.04	0.082	+58	69
EZ Sampler behind Boumatic Meter (proper setup)	86	+0.18	0.368	-0.06	0.047	+121	127



Metatron Meter



- Certified Controller Combinations
 - Metatron 12
 - S21/P21
 - Dematron 70
 - Dematron 75
- Low-Line Installation
- High-Line Installation is now ICAR-certified.
- Must Use GEA/Westfalia Sampler
- Reports of Sampler Flooding with Higher Milk Flow Rates or Vented Inflations – ICAR investigating.



Metatron Meter Report

DairyPlan DPList 5.212.022 NO10C108 BOS 4

1-02-09 6:45

Meter	Number Weights	No Cow#	Cow# Hand	Cow# Auto	Auto %	----Averages----		%Dev	Total Milk
						Milk	Time		
54	47	0	0	47	100	27.11	5.0	0	1274
55	46	0	0	46	100	27.79	5.1	1	1278
56	47	0	0	47	100	31.78	5.1	9	1494
57	45	0	0	45	100	27.42	5.1	-5	1234
58	47	0	0	47	100	28.78	5.1	7	1352
59	46	0	0	46	100	26.76	4.8	-3	1231
60	46	0	0	46	100	26.96	4.8	-2	1240
61	47	1	0	46	100	25.81	5.0	-0	1213
62	47	0	0	47	100	24.92	4.8	-6	1171
63	47	1	0	46	100	28.43	5.0	3	1336
64	46	0	0	46	100	28.17	4.8	4	1296
65	46	0	0	46	100	25.97	5.0	-5	1195
66	46	0	0	46	100	26.98	5.0	-1	1241
67	46	0	0	46	100	26.73	4.9	-7	1230
68	45	0	0	45	100	26.49	5.0	-3	1192
69	47	0	0	47	100	28.53	5.0	2	1341
70	46	0	0	46	100	27.88	5.1	-1	1283
71	45	0	0	45	100	25.84	4.9	-0	1163
72	46	0	0	46	100	26.23	5.0	-3	1206
	3302	8		3294	100	26.67	4.9	-1	88060

NO QUALIFYING DATA TO PRINT

0 Cows identified more than once

0 Unknown responders

Metatron yield analysis

At the end of the milking session, the Metatron yield analysis gives an overview of the key figures for the milking session.

An identification statistic (A) gives an idea of the quality of automatic identification. Milk quantities without identification are not included in this because the causes are too numerous.

In this example, the percentage deviation (B) of the amount milk obtained from the amount of milk expected shows a negative trend in the herd.

If individual Metatron units show two-figure deviations over several days, this points to a fault.

Metatron Performance Analysis

Last Milking date and time
4-04-05 3:39 - 7:27

Number	No Cow#	Cow# Hand	Cow# Auto	Auto %	---Average---		%Dev	Total Milk
Meter Weights					Milk	Time		
1	14	0	0	14	100	13.05	5.4	183
2	14	0	0	14	100	14.52	6.3	203
3	14	1	0	13	100	13.88	6.7	194
4	14	0	0	14	100	12.08	8.8	179
5	13	1	0	12	100	13.08	5.9	170
6	13	0	0	13	100	13.88	7.2	181
7	13	1	0	12	100	14.32	5.4	186
8	13	0	0	13	100	12.88	6.7	167
9	13	1	0	12	100	12.38	6.0	161
10	13	0	0	13	100	13.35	6.5	174
11	13	0	0	13	100	15.73	6.1	205
12	13	0	0	13	100	12.48	6.5	162
13	13	0	0	13	100	13.28	6.5	173
14	13	0	0	13	100	12.58	5.8	164
15	13	0	0	13	100	13.43	6.3	175
16	13	0	0	13	100	14.92	7.0	194
17	13	0	0	13	100	12.25	6.1	159
18	13	1	0	12	100	13.29	6.1	173
19	13	0	0	13	100	11.66	5.7	152
20	13	0	0	13	100	13.92	6.9	181
21	13	0	0	13	100	13.05	6.4	170
22	14	0	0	14	100	12.39	6.6	173
290	5			285	100	13.33	6.3	3868

NO QUALIFYING DATA TO PRINT

0 Cows identified more than once

0 Unknown responders

The results of previous milking sessions can also be displayed by shifting the visible section of the window.



Metatron Meter Report

milkrite | InterPuls

MMV Meter

- **Certified Controller Combinations**
 - **iMilk 600+**
 - **ACR Smart**
- **Must use sampler from Interpuls**
- **Low-Line Installation is ICAR-certified**
- **High-Line will be tested in 2019**
- **Software designed with multiple algorithms to compensate for vented inflations**





PRECISE DAIRY FARMING



- **Uncertified Sensor from SCR**
 - **FFS 30 Sensor**
 - **ED 200 Display**
 - **MC 200 Controller**
- **FFS 30 is same as DeLaval FI 5**
- **SCR has not tested or applied for ICAR testing/certified**
- **Cannot be used for DHI programs**

DATAMARS



Lactocorder T-T



- Lactocorder is manufactured by WMB from Switzerland
- ICAR-certified for cattle, goats and sheep
- Marketing agreement between Datamars/Tru-Test and WMB
- **Lactocorder is not field ready yet – device is certified however total system needs refinement/review**
- Meter works on the expected milk yield principle – need to have ID and previous milk in the system



Waikato Electronic Milk Meter



- Waikato applied for ICAR test late in 2017 – delayed four times by Waikato.
- Includes EMM, new sampler and software
- Will be conducted in three parts
 - Lab – France
 - Farm #1 – Michigan
 - Farm #2 – Ireland
- **Cannot use this meter for DHI programs currently**