better milking advice with
VADIA 2

Understand and manage udder health and milk quality problems

16 hours of logging · Ultra light · Standalone · Waterproof · Bluetooth

Logging and Analyzing Milking Vacuum

Udder health problems are often related to the milking equipment, many times in combination with inadequate milking routines. Notorious are teat-end vacuum fluctuations due to poor quality liners, liner slips or insufficient vacuum capacity. Pathogens reaching the teat-end due to 'backspray' or 'cluster-flooding' is another known cause.

BioControl's VaDia is designed for milking technicians, advisors, veterinarians and other professionals in the dairy industry to deal with these problems. It is the next-generation instrument for testing during milking ('wet test') and is the result of a close cooperation with the International Dairy Federation IDF and Tine, the Norwegian dairy farmers cooperative.

Malfunctioning pulsators also have a big impact on udder health and milk quality. VaDia can be used for quick and easy Pulsator Testing and Falloff and Attachment Testing (ISO 5707 and 6690).
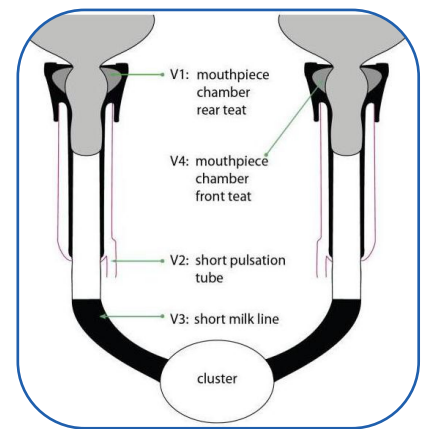
Milk line cleaning – Slug analysis, The cleaning of the milk line is assured through a few different processes. VaDia is analyzing the physical aspect of the slug that is being sent through the milk line.

VaDia is small and lightweight enough to be taped to a teatcup during milking. VaDia works completely 'stand-alone', which enables the advisor to forget about the actual measurement and concentrate on observing milking routines. The logged data is analyzed after or during milking with VaDia Suite, an easy-to-use PC-tool to view vacuum details and generate summary reports.
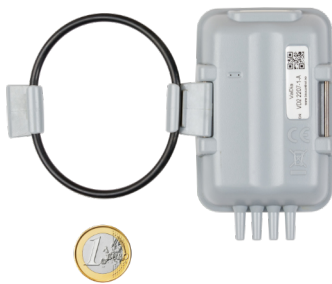
Bluetooth streaming mode is available for real-time, in-parlor diagnostics. This is also handy for advisors, schools and practical farmers who can use VaDia as a training tool for new milkers and students. VaDia Suite is adapted for touch screen use, allowing the user to see the data live and perform tests and recordings in the parlor as well as the VaDia+ for Android and iOS device.

Taped to cluster during milking

V1: mouthpiece chamber rear teat

V4: mouthpiece chamber front teat

V2: short pulsation tube

V3: short milk line

cluster

4 vacuum logging points

Small, lightweight, 'shell-curved'

4 vacuum channels, indicator light and watertight USB
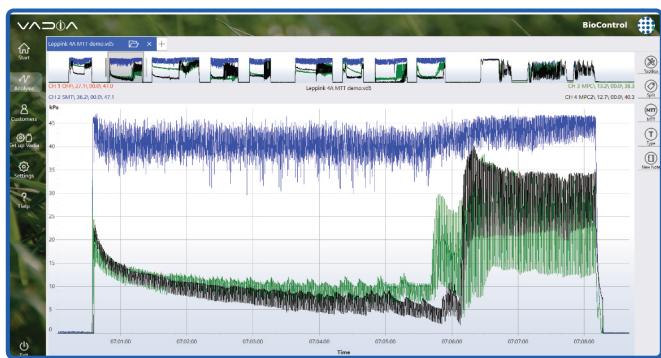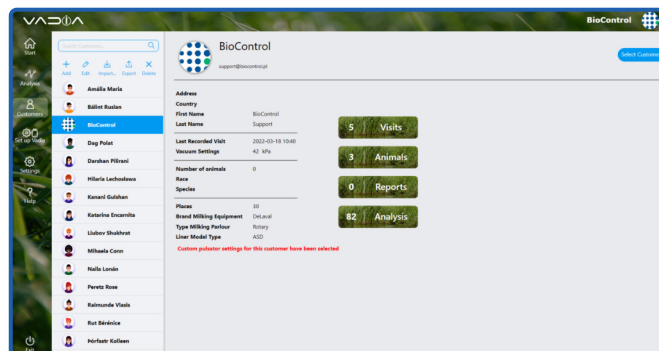

Built-in battery, up to 16 hours of logging

Measuring frequency:	200 Hz pr. Channel
Accuracy:	+/- 0.2 kPa
Measurement range:	0 to -100 kPa
No of channels:	4
Communication:	USB and Bluetooth 5 low energy.
Battery:	Rechargeable Polymer Lithium-Ion Battery 3.7V / 1350mAh
Weight:	<80g with battery
Log transfer speed:	Approx. 20 sec. per hour of logs
Casing:	Rugged and water proof, but care must be taken to minimize risk of malfunction due to moisture getting through nipples.

VaDia Suite PC Program for Analysis and Report Making

Fully integrated PC-software with modules for:

- Milking Time Test and Milking Registration
- Pulsator Testing (ISO 6690), Cluster Falloff and Attachment Testing (ISO 6690)
- Milk Line Cleaning - Slug analysis
- Milking Parlour Efficiency test
- Liner Compression test
- Resistance in Milkflow test

- User Interface adapted for touch screens
- Automatic updates when you start up the PC program
- Comprehensive customer database and results from previous tests
- Available in many languages, including Asian languages
- Reports made as .pdf for easy storing and emailing
- Deviations from target values highlighted
- Reports with summary page and chosen information from tests
- Easy Bluetooth streaming with fast insertion of pulsator number
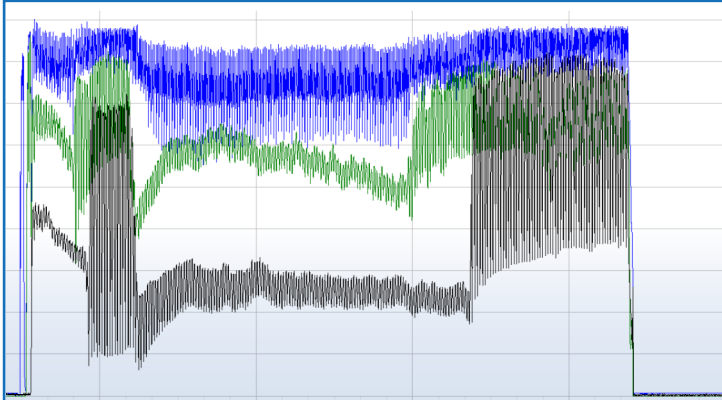- For all brands and types of milking equipment, including robots

Mobile app for Android and iOS

- View vaccum in real time
- UP to 4 VaDia devices connected at once
- Live Pulsator Test results
- Milk Line Cleaning - Slug analysis
- Fall off test - step by step procedure
- Easily create, browse and share reports

Analyze Data Gathered with the VaDia

Analyze Milking Time Test results and get information regarding: preparation time, let down time, peak flow time and vacuum, Mouth Piece Chamber and Short Milk Tube vacuums, overmilking, irregular vacuum fluctuations, etc.
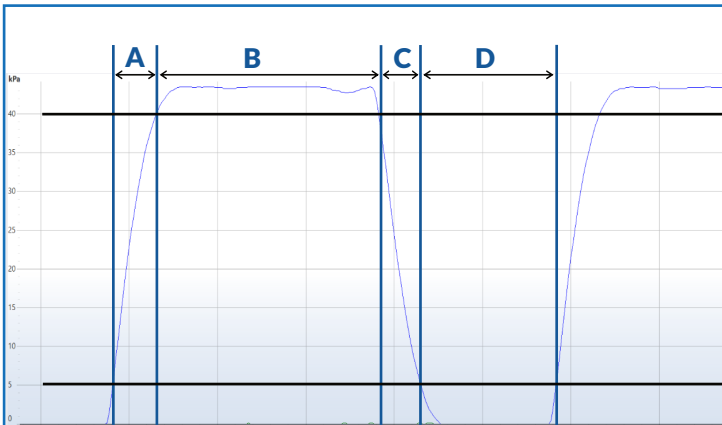

Blue - Short Milk Tube (teat-end vacuum)
Green - Mouthpiece Chamber rear teat
Black - Mouthpiece Chamber front teat
Courtesy: Dr. Zanini

Bimodal milk release, significant overmilking

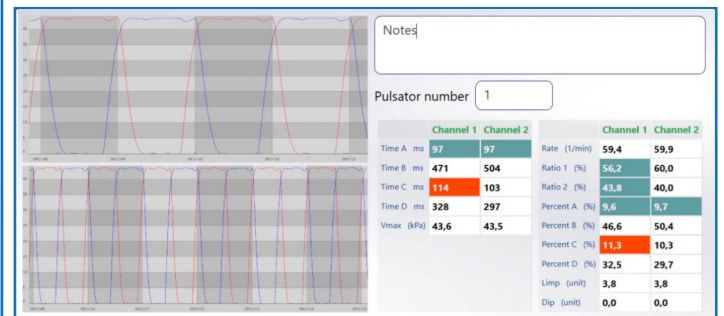|	
Scale	kPa
Velocity	13,61
Slug Length (sec)	2,41
Distance	10
Diameter	48,00
Vacuum drop	29,2
Work Vacuum	42

Milk line cleaning – Slug analysis, the cleaning of the milk line is assured through a few different processes. VaDia is analyzing the physical aspect of the slug that is being sent through the milk line.
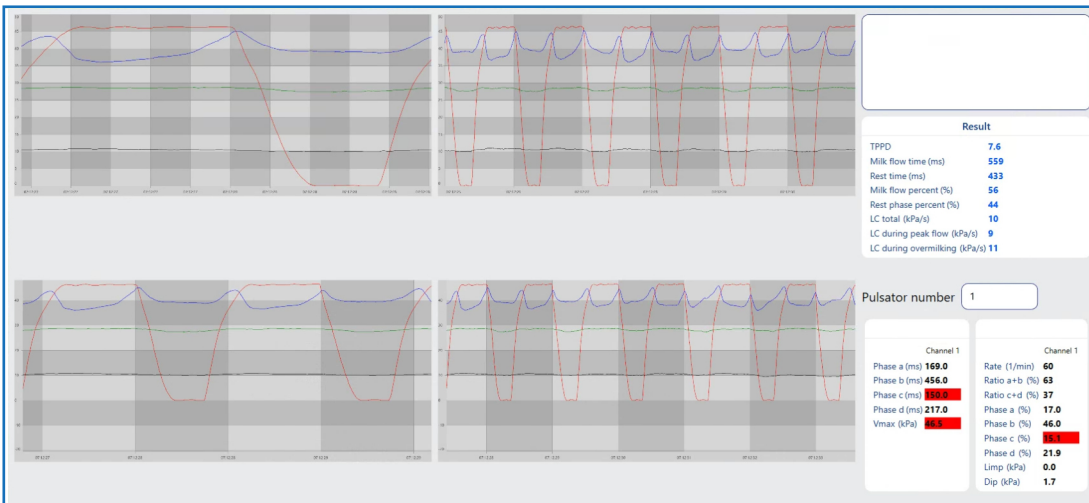

Correct timing of A, B, C and D is imperative for proper udder management

Compare pulsator and vacuum with customer set targets.

Pulsator number 1

	Channel 1	Channel 2		Channel 1	Channel 2
Time A ms	97	97	Rate (1/min)	59,4	59,9
Time B ms	471	504	Ratio 1 (%)	56,2	60,0
Time C ms	114	103	Ratio 2 (%)	43,8	40,0
Time D ms	328	297	Percent A (%)	9,6	9,7
Vmax (kPa)	43,6	43,5	Percent B (%)	46,6	50,4
			Percent C (%)	11,3	10,3
			Percent D (%)	32,5	29,7
			Limp (unit)	3,8	3,8
			Dip (unit)	0,0	0,0

VaDia Suite Pulsator Test Results

Result	
TPPD	7.6
Milk flow time (ms)	559
Rest time (ms)	433
Milk flow percent (%)	56
Rest phase percent (%)	44
LC total (kPa/s)	10
LC during peak flow (kPa/s)	9
LC during overmilking (kPa/s)	11

Pulsator number 1

	Channel 1		Channel 1
Phase a (ms)	169.0	Rate (1/min)	60
Phase b (ms)	456.0	Ratio a+b (%)	63
Phase c (ms)	150.0	Ratio c+d (%)	37
Phase d (ms)	217.0	Phase a (%)	17.0
Vmax (kPa)	46.5	Phase b (%)	46.0
		Phase c (%)	15.1
		Phase d (%)	21.9
		Limp (kPa)	0.0
		Dip (kPa)	1.7

Liner Compression test can be used to assess the rubber and elasticity of the liner. It gives a better insight into the actual milk flow time and vacuum during liner opening and closing. The calculations are done during peak milk flow.