Logging and Analyzing Milking Vacuum

VaDia is developed by BioControl in close cooperation with IDF, the International Dairy Federation and Tine, the Norwegian dairy farmers cooperative. VaDia logs the vacuum during milking at 4 points in the milking cluster. It is battery operated and small and lightweight enough to be attached to a teat cup during milking. VaDia is the ideal instrument for easy Milking Time Testing and fast Pulsator Testing, designed for advisors and professionals in the dairy industry.

Logging and Analyzing Milking Vacuum

The IDF project group ‘Milking Time Tests and Interpretation of Results’ has initiated VaDia as an instrument for Milking Time Test routines. VaDia can be used for vacuum logging during milking to better analyze milking routines and milking equipment in order to improve udder health and milk quality.

The IDF project group ‘Milking Time Tests and Interpretation of Results’ has initiated VaDia as an instrument for Milking Time Test routines. VaDia can be used for vacuum logging during milking to better analyze milking routines and milking equipment in order to improve udder health and milk quality.

The logs are stored in the VaDia and downloaded to a PC for detailed analysis after milking. Bluetooth streaming data enables immediate, in-parlor results, which is very convenient for diagnostics during milking.

- 4 vacuum channels, 200 samples/second/channel, 8 hours logging capacity
- Log-file retrieved through USB. Bluetooth streaming data with 200 samples/second/channel
- Rechargeable AA battery, charging from PC-USB. If battery is empty: Alkaline AA can be used for emergency
- VaDia Suite software for analyzing and report making
- Water resistant housing, HxWxD: 9x6x3 cm. 85 grams
- Up to 80 kPa, accuracy ± 0.2 kPa

Log-file retrieved through USB. Bluetooth streaming data with 200 samples/second/channel
Easy Milking Time Test with VaDia

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 'back-spray' or 'cluster flooding' is another known cause.

BioControl’s VaDia is designed for milking technicians, advisers, veterinarians and other professionals in the dairy industry to deal with udder health and milk quality problems. It is the next generation Milking Time Test (MTT) instrument for testing during milking.

VaDia works completely 'stand-alone', which enables the advisor to forget about the actual measurement and concentrate on observing milking routines.

VaDia can be used on all brands and types of milking equipment, including robots.

MTT with VaDia gives insight in:
- Proper cow preparation (fast milk release)
- Overmilking
- Automatic take-off functioning
- Do these liners fit these teats?
- Vacuum level and fluctuations
- Average teat-end vacuum during peak flow
Fast Pulsator Testing with VaDia

Research clearly demonstrates that malfunctioning pulsators have a big impact on udder health and milk quality. Correct timing of the A, B, C and D-phases is important to ensure fast and complete milking; correct vacuum build-up in the pulsator channels is necessary to ensure proper liner opening and closing. Professional dairy farmers understand that the pulsator is a critical component that needs to be tested periodically.

The VaDia Suite PC-software is equipped with a Pulsator Test module for fast and easy pulsator ‘dry-testing’ according to ISO 6690 and for detailed analysis during milking in the Milking Time Test. Pulsator Testing with VaDia can be done:

- Online (Bluetooth streaming for immediate result during the test)
- Offline (analyzing all pulsator data after the test)

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

VaDia for pulsator test (T-pieces supplied in VaDia kit)

VaDia connected to milking cluster for pulsator dry-test
VaDia Suite for analyzing and report making

- Fully integrated PC-software with modules for
  - Milking Time Testing
  - Pulsator Testing (ISO 6690)
  - Cluster Falloff and Attachment testing (ISO 6690)
- Always work with latest features with automatic updating, no need to manually install updates
- Comprehensive customer database with installation details and results from previous tests
- Automatically compare pulsator and vacuum with customer set targets, deviations are highlighted
- Analyze MMT results and compare:
  - milking details, vacuum fluctuations, etc.
  - milking clusters, liners, vacuum drops, etc.
- Easy in-parlor assessment using Bluetooth
- Add company logo to the reports
- Reports are in XML, allowing organizations to (re-) design reports and add-on modules with DLL
- Available in many languages, including many Asian languages (contact us for update on available languages)

VaDia Suite contains a comprehensive customer database with relevant installation details.

The pulsator test conditions can be set for each customer to accommodate different farms. Deviations from the targets are highlighted in the pulsator test report.

Reports are made as pdf for easy storing and emailing.

The company logo can be added to the report.

Deviations from the target are highlighted.
VaDia Suite for analyzing and report making

The analysis function contains a ‘navigation’ window for keeping track where you are in the recordings and a ‘zoom’ window for displaying all details.

The zoom window is convenient for easy indication of average, min and max teat-end vacuum after one minute in the peakflow.

The MTT report lists the summary of all test results on the first page.

Data from different VaDia’s are listed as separate series so that MTT results from different milking points can be compared.

All individual MTT results with graphs are listed on the next pages of the report to visualize the milking details to the farmer.

**Table**

<table>
<thead>
<tr>
<th>Animal No.</th>
<th>Milk yield (kg)</th>
<th>Vacuum on site (kPa)</th>
<th>Largest milking time (min)</th>
<th>SMT Time (min)</th>
<th>SMT (kPa)</th>
<th>SMT Overmilk (kPa)</th>
<th>MTT PS (kPa)</th>
<th>T Stabil. (kPa)</th>
<th>Average Vacuum Stabilization (kPa)</th>
<th>Average Milk Flow (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>123</td>
<td>15.9</td>
<td>39.0</td>
<td>01:30</td>
<td>40.1</td>
<td>39.0</td>
<td>40.1</td>
<td>39.6</td>
<td>44.3</td>
<td>4.0</td>
<td>1.67</td>
</tr>
<tr>
<td>1459</td>
<td>18.3</td>
<td>39.11</td>
<td>01:11</td>
<td>41.3</td>
<td>39.0</td>
<td>41.7</td>
<td>44.3</td>
<td>26.4</td>
<td>5.2</td>
<td>1.67</td>
</tr>
<tr>
<td>1123</td>
<td>17.3</td>
<td>39.11</td>
<td>01:19</td>
<td>40.1</td>
<td>39.0</td>
<td>40.1</td>
<td>39.6</td>
<td>44.3</td>
<td>4.0</td>
<td>1.67</td>
</tr>
<tr>
<td>1409</td>
<td>18.1</td>
<td>39.11</td>
<td>01:10</td>
<td>40.1</td>
<td>39.0</td>
<td>41.1</td>
<td>41.9</td>
<td>26.4</td>
<td>5.2</td>
<td>1.67</td>
</tr>
<tr>
<td>1490</td>
<td>17.9</td>
<td>39.11</td>
<td>01:10</td>
<td>40.1</td>
<td>39.0</td>
<td>41.1</td>
<td>41.9</td>
<td>26.4</td>
<td>5.2</td>
<td>1.67</td>
</tr>
<tr>
<td>1790</td>
<td>17.5</td>
<td>39.0</td>
<td>01:10</td>
<td>40.1</td>
<td>39.0</td>
<td>41.1</td>
<td>41.9</td>
<td>26.4</td>
<td>5.2</td>
<td>1.67</td>
</tr>
<tr>
<td>2</td>
<td>15.9</td>
<td>39.11</td>
<td>01:42</td>
<td>40.2</td>
<td>39.0</td>
<td>40.2</td>
<td>39.6</td>
<td>26.4</td>
<td>4.7</td>
<td>1.67</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.67</td>
</tr>
</tbody>
</table>
Cluster Falloff and Attachment Test with VaDia

The objective of the cluster falloff and attachment test is to test if the vacuum recovery is in accordance with the ISO 6690 standard, which is mandatory in certain countries. The VaDia Suite contains a module to test if the vacuum recovery is according to the standard.

VaDia Kit is complete, in robust transport case

The VaDia kit includes:

- 1 or 2 VaDia’s
- USB cable, Power Supply
- Piercing needle
- Box with accessories
  - T-pieces
  - Milk filter holders
  - Milk filters
  - Steel tubes
- Roll of silicon tube
- PC-program ‘VaDia Suite’
- Startup Guide

VaDia connected to the milk receiver at point Vm (test point may vary due to local legislation)