MIRROR
sperm quality analysis software

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ACCURACY, REPEATABILITY, OBJECTIVE RESULTS

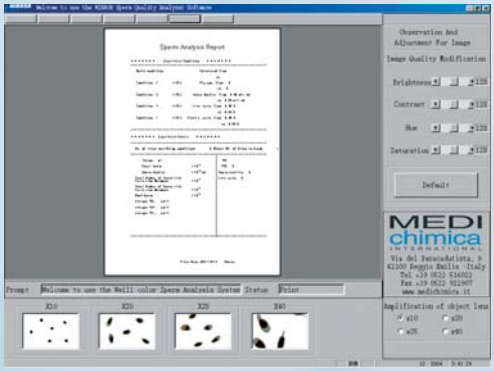
Welcome and setup page

The Sperm Analysis System MIRROR allows for fast and accurate analysis of swine sperms. It overcomes the shortcomings of traditional tests, which are time-consuming and inconvenient, and is a proper alternative to manual analysis. This product is suitable both for the ordinary analysis of sperms in boar studs and for research purposes.

The instrument applies modern computing and image processing techniques to the swine sperm quality tests.

It is the only analysis system that can be easily and economically adapted to the optical systems your laboratory is equipped with.
An economical, quick and rational solution that can be regarded as a real breakthrough as far as sperm motility analysis is concerned.

Whether you require basic counts and motilities or detailed analysis of sperm motion, MIRROR provides you with the results you need. The results relating to motile, progressively motile and static sperm, which are accurate and repeatable, include the concentrations and percentages.

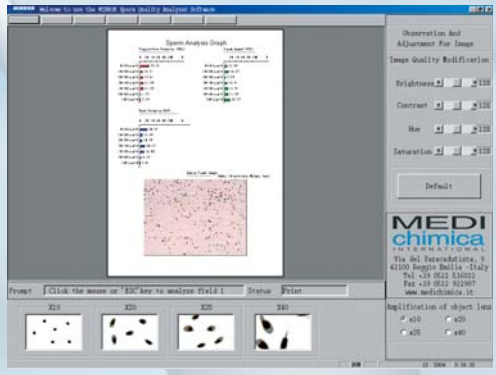


Sperm analysis report

The main functions of this instrument include:

- Quantitative analysis relating to total sperm cell number, sperm density, vitality and movable sperm percentage;
- Analysis of sperm movement and speed as well as movement track;
- All static and dynamic parameters relating to sperm can be obtained in compliance with the WHO standards;
- All data obtained trough analysis, bar charts referring to sperm velocity and vitality and sperm movement tracks can be easily printed out;
- The analysis results can be stored on a computer and can be easily backed-up, referred to or deleted;
- Swine test records can be easily stored, copied, queried and deleted. Dynamic sperm images can be recorded on a videotape for further analysis;
- The whole system can instantly provide clinicians and researchers with an audio-visual analysis method and, at the same time, it can instruct the production of frozen sperms through the automatic calculation function of the software;
- Errors of optical parts can be removed automatically;
- Virtual grids can be added to a sperm image and selected parts of a picture can be zoomed in.

The whole analysis procedure is fast and can provide an important scientific basis for animal breeding tests.



Sperm analysis graph

Communication with any database

The analysis results obtained through MIRROR can be imported into other database systems. Medi Chimica International has combined the MIRROR software with its own integrated management system of the boar stud "ANCORA". By using both programmes, it is possible to standardize the quality of the semen being produced and to provide complete traceability of the semen lots being packed and distributed.

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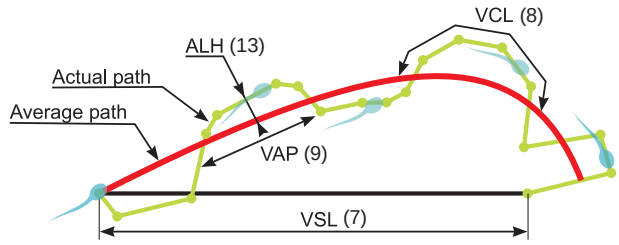
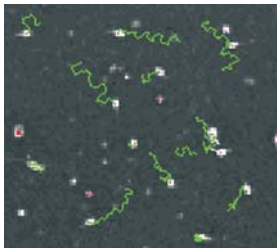
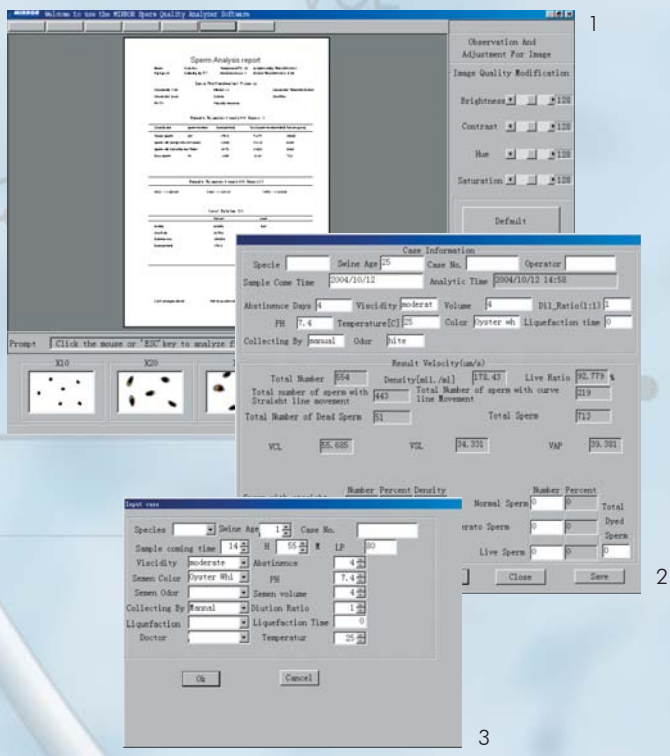


Sperm tracks and speeds


Real time sperm tracks and speeds

PARAMETER	DESCRIPTION
1 Total Number of Sperms (TNS)	The total number of sperm cells in the analyzed vision fields
2 Number of Movable Sperms (NMS)	The total number of movable sperm cells in the analyzed vision fields
3 Motile Sperm Percentage (MSP)	NMS divided by TNS then multiplied by 100
4 Live Sperm Percentage	Number of live sperm cells identified by chromos-copy divided by total sperm cells then multiplied by 100
5 Sperm Density	The number of sperm cells in a unit volume (number/ml)
6 Total Sperm	The total number of sperm cells in an injection; it is equal to sperm density by sperm volume.
7 Progressive Velocity (VSL)	The straight distance a sperm cell moved divided by the time spent (unit: μm/s)
8 Track Velocity (VCL)	The length of an actual track a sperm cell moved divided by the time spent (unit: μm/s)
9 Path Velocity (VAP)	The length of an average path divided by the time spent (unit: μm/s)
10 Linearity (LIN)	VSL/VCL
11 Straightness (STR)	VSL/VAP
12 Wobble (WOB)	VAP/VCL
13 Lateral Amplitude (ALH)	The maximum distance between the actual track and the average path of a sperm cell (unit: μm)
14 Mean Angle Degree (MAD)	Sum of the absolute value of an angle between two line segments on an actual sperm track divided by the time spent
15 Beat Frequency (BCF)	Total times the actual track and the average path were crossed by a sperm cell divided by time spent (unit: times/s)
16 Total number of sperm cells in straight line mode	When VSL/VCL>C, that sperm is said to be moving in a straight line mode
17 Total number of sperm cells in curve mode	When VSL/VCL<C, that sperm is said to be moving in a curve line mode

NOTE: C is an empirical value derived from numerous clinical experiments.


1

2

3

1. Sperm analysis report n.2
2. Result velocity
3. Input case

Software Optimized for Use with MC Chamber Slide 10

The software of the MIRROR Analyzer optimizes the use of the MC Chamber Slide 10 to give you the fastest analysis speed, thanks to easy on-stage loading and pre-programmed stage positions for each chamber. The Leja slide is proven to be non-toxic to boar sperm, accurate and cost-effective for use with our analyzer; all manufactured lots are tested in vivo on boar sperm for quality.

No time is wasted during the analysis process; the layout of the MC Chamber Slide 10, whose "entry ports" are located along the right edge of the slide itself, allows for a quick preparation of the sample to be analysed.

- Chamber depth accuracy was dramatically improved by 50% through precise production methods and quality control.
- Lastly, the slide doubled the number of analyses per chamber, reducing the cost per analysis, and making it a cost-effective option.

COMPONENTS AND ACCESSORIES

Code	Name	Specification
MIR01	Computer	Pentium-IV 3.0G 80G 512M
MIR02	Monitor	17" Colored flat angle
MIR03	Printer	EPSON STYLUS C41SX Colour Injector 1440dpi
MIR04	Microscope	B2-223A Tri-Nocular Biomicroscope10X 20X 40X 100X
MIR05	Card	High-speed colour image collection card
MIR06	CCD Camera	Panasonic WV-CP240/G 470 lines Color Camera
MIR07	Softdog	USB
MIR08	Sperm Chamber	Ruby
H70601	Sperm Chamber	MC chamber slide monouse 10 μ
MIR10	Software	Mirror Dynamic Analysis Software
MIR11	Software	Mirror Morphologic Analysis Software