



Homogeneous production of seminal doses: Little changes, big differences

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Boar semen analysis



Fresh ejaculate analysis



QC of the doses:

- Pre-packaging
- Post-packaging
- Post-cooling



QC of the doses:

- In the AI Stud
- Sow farm



Advantages

1. Objective and accurate analysis of sperm motility
2. Faster analysis
3. Comprehensive analysis of semen parameters
4. Improved quality control
5. Traceability and record-keeping

Drawbacks

1. Inaccurate results:

The accuracy of the results can be affected by factors such as sample preparation, instrument calibration, and software settings. Inaccurate results can lead to the production of seminal doses that do not meet the required quality standards.

2. Lack of standardization:

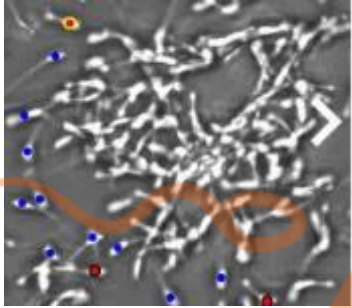
There is currently no standardized protocol for the use of CASA systems in boar semen evaluation. This can lead to variability in results across different laboratories and institutions, making it difficult to compare and interpret data.



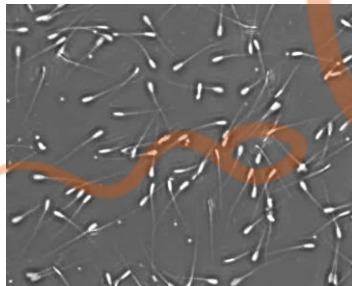
Target dose. What could go wrong?



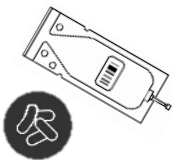
Agglutination



Immotile



Contamination



- Concentration: # million per dose
- Motility > ##%
- Morphology < ##%



- Hygiene in collection/production
- Handling of sample
- Temperature
- Correct dilution of extender
- Extender formula
- ...

Target dose. What could go wrong?

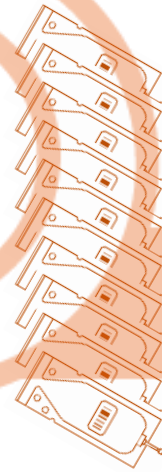


- Concentration: # million per dose
- Motility > ##%
- Morphology < ###%

I am wasting resources?

Could I have a problem?

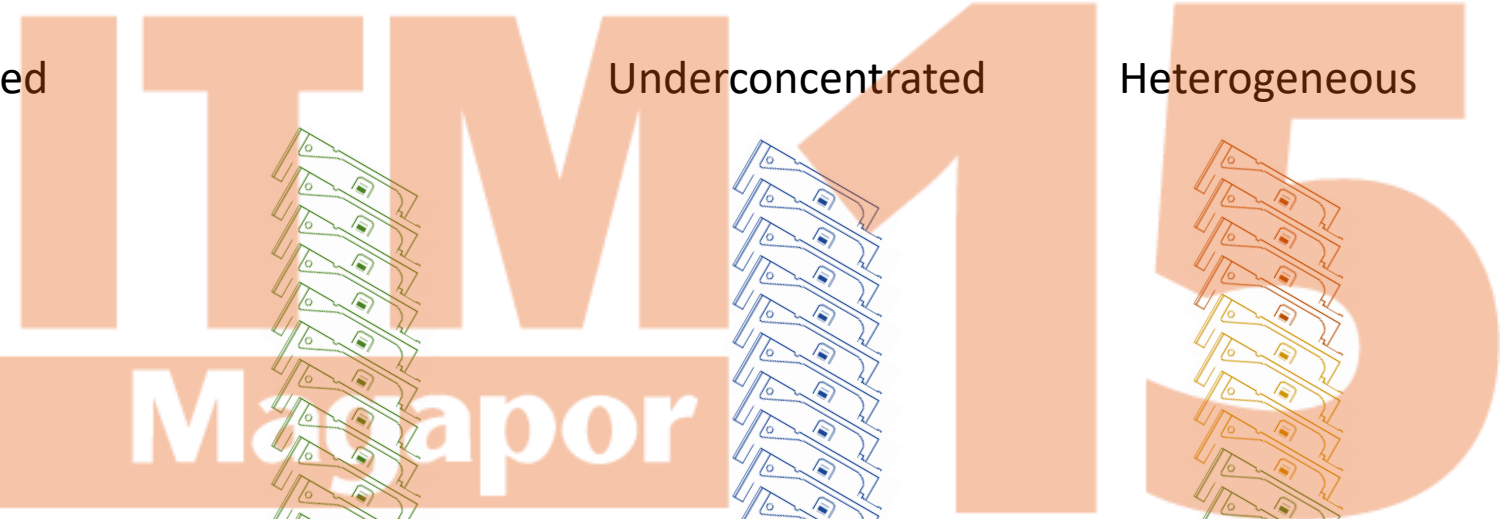
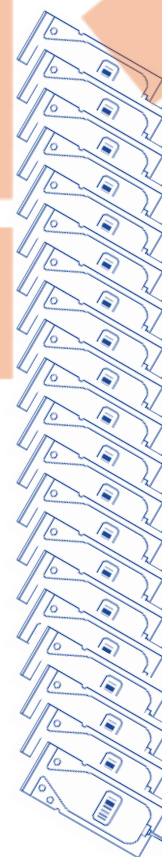
Overconcentrated



Underconcentrated



Heterogeneous





Before analysis

Correct measurement of the volume

- * Volumetric (glass)
- * weight

Preparation of the sample to analyze

- * Homogenization of semen prior sample is taken
- * Correct pipetting of the sample
- * Correct pipetting of the extender for the dilution
- * Correct mixing

Loading of the chamber

- * Correct mixing prior analyzing
- * Pippeting of the sample
- * Loading of the chamber



During analysis

Analysis protocol

- Number of fields
- Number of sperm per analysis
- Clasification of agglutination
- Focusing of the sample
- Software itself
- Application of dilution factor

After analysis

Dilution of the semen

- * Dispensation of extender
- * Residual volume in the ejaculate container
- * Correct mixing

Packaging of the samples

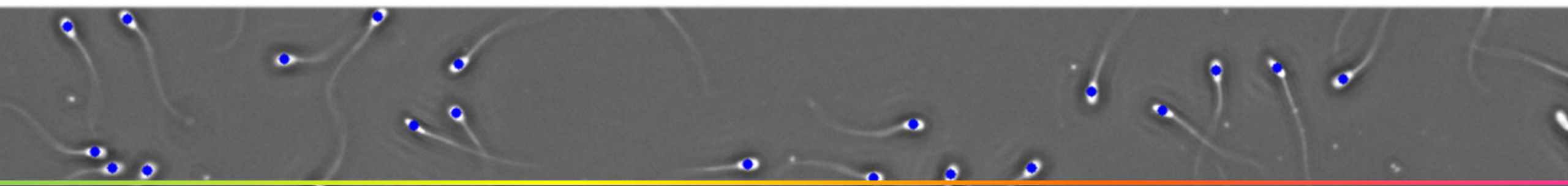
- * Correct mixing
- * Time to package = decantation

* Handling of volume & dilution

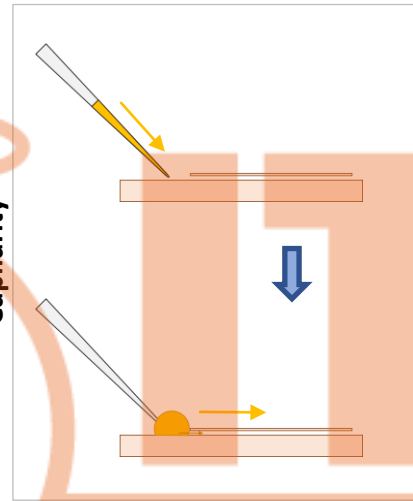
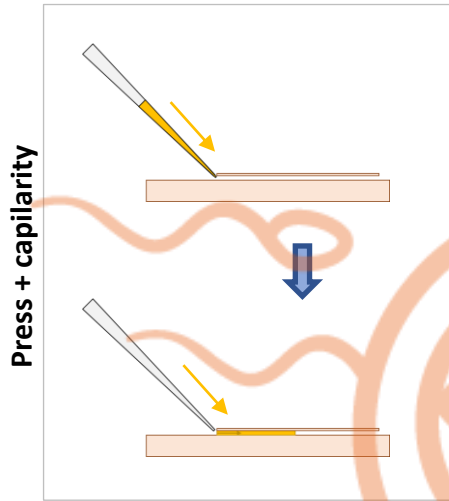
- Dispenser, scale pipette... care and maintenance.
- Correct protocols and training.

* Mixing

- Cells are in suspension.
- Cells are alive and delicate.



Loading of the chamber

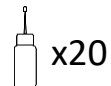
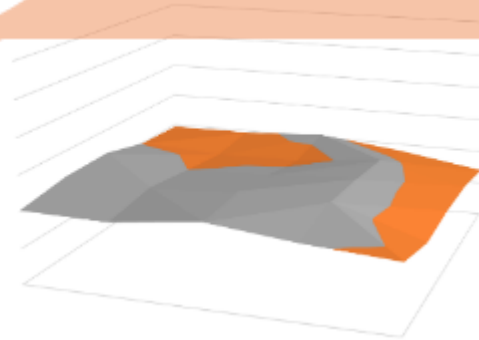
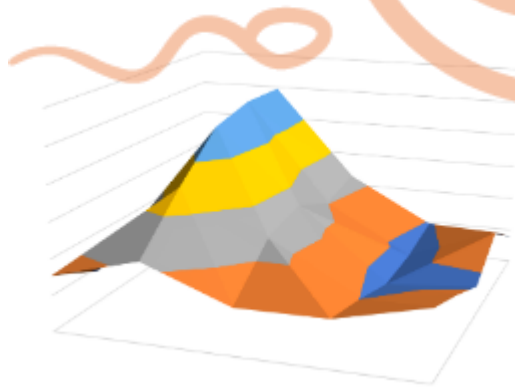


Conclusion

Important to pay attention how to load the sample:
by capillarity and 45° angle.

Sample if not can distribute unevenly:

- Tends to homogenize over time
- Happens in different brands of chamber slides



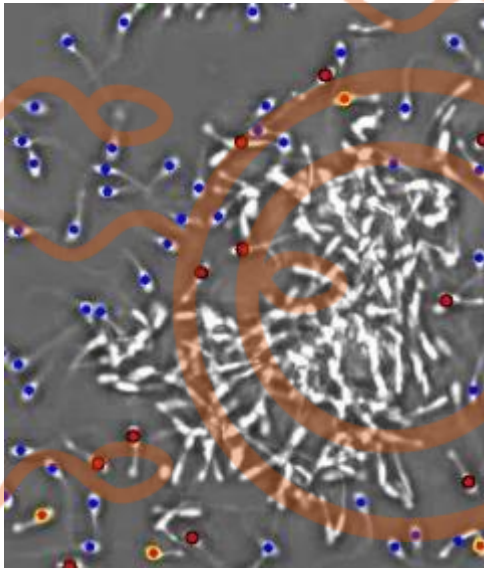
MAGAVISIONsci



20µm – 3.5µL



During analysis



Analysis protocol

Number of fields

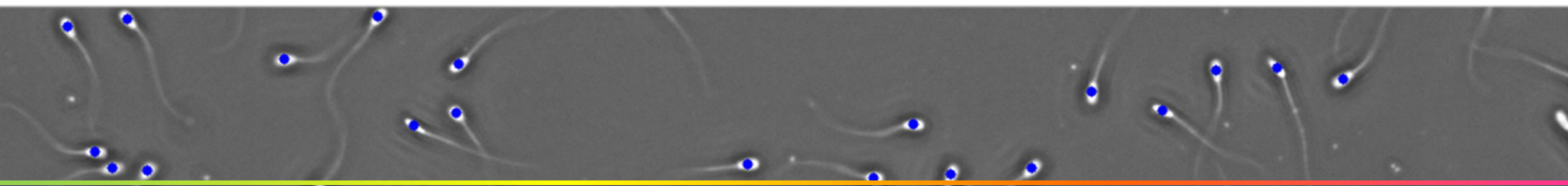
Number of sperm per analysis

Classification of agglutination

Focusing of the sample

Software itself

Application of dilution factor





Before analysis

Hygiene

- Contamination
- Agglutination

Temperature

- Collection recipient and extender
- Sample dilution extender

During analysis

Fresh ejaculate

- Time elapsed from extraction

Stored doses

- Time of incubation

Both

- Loading of the chamber
- Number of fields
- Number of sperm per field
- Agglutination
- Software itself

Temperature

- Samples
- Slides and pipettes
- Microscope stage

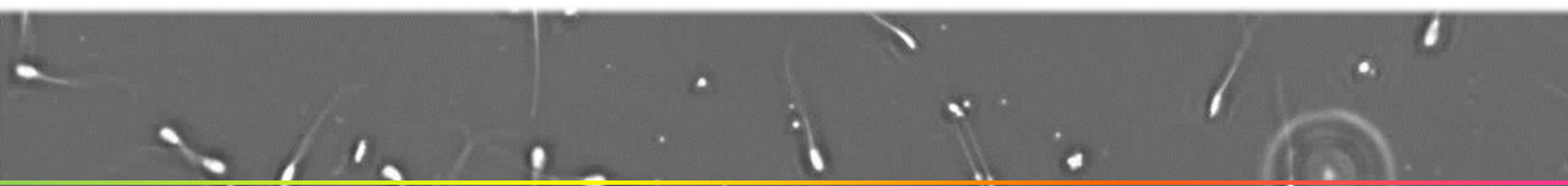
After analysis

Conservation of the doses

- Temperature
- Extender
- Recipient
- Transport

Temperature

- Final dilution
- During packaging
- Before storing



How does the

incubation

time affect the

QC

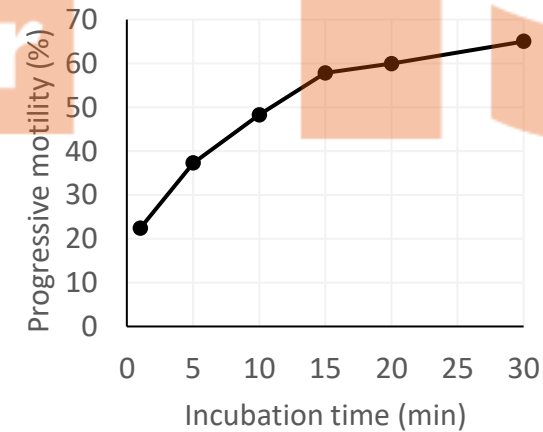
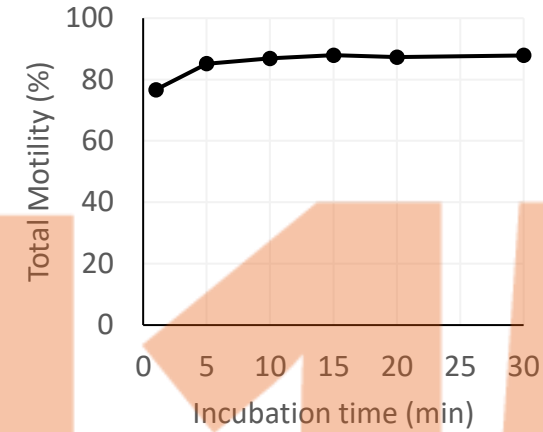
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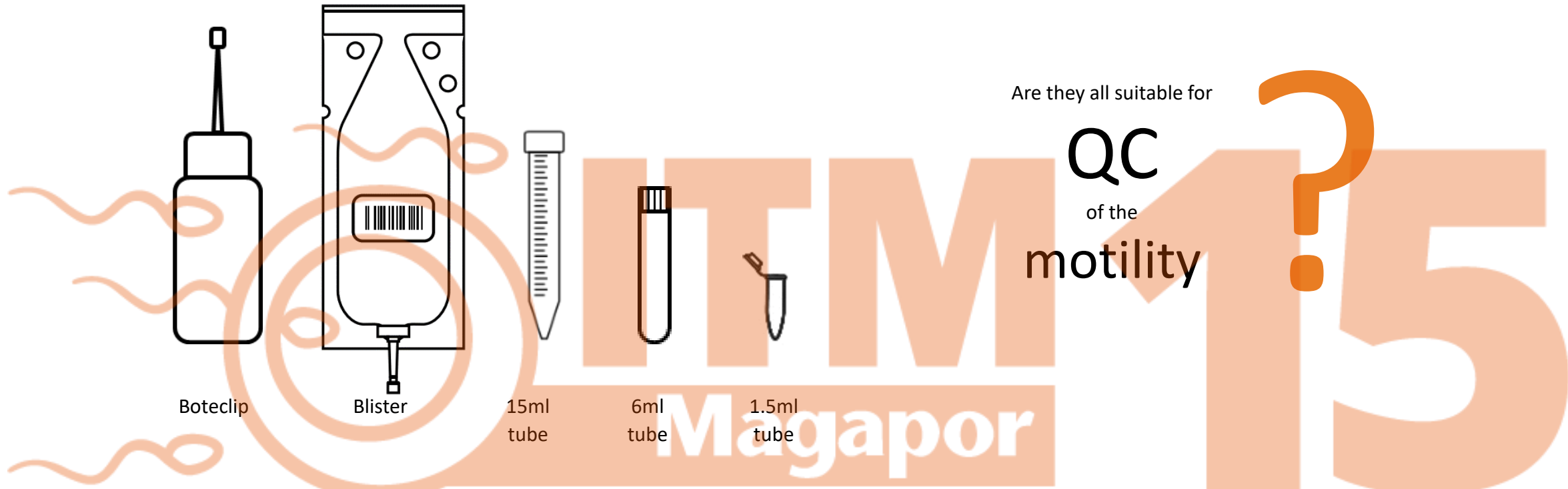
motility



When evaluating stored doses, a minimum of 5-10 minutes of incubation is required to obtain reliable results

Conclusion





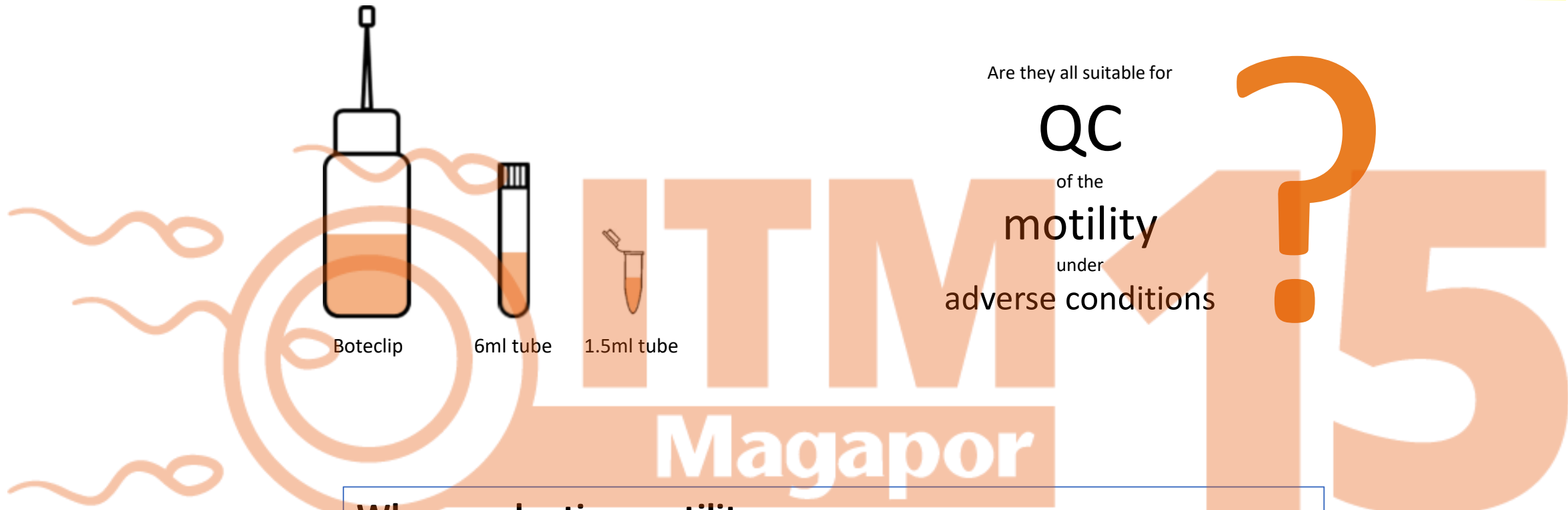
Are they all suitable for

QC
of the
motility



Conclusion

When evaluating motility, the container does not affect when stored on optimal conditions



Conclusion

When evaluating motility:

- The presence of air chamber does affect.
- The container does affect when stored with air chamber



**THANKS
GRACIAS**

Magapor

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