

THE ANALYTICAL EVALUATION OF SPERMALITE (SQA -V) FOR THE DETERMINATION OF SEMENPARAMETERS.

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Introduction:

Semen analysis by using the WHO criteria (1) is very time consuming and prone to significant inter-observer irreproducibility, especially in the assessment of sperm motility and morphology. It is considered that by means of automation the semen analysis can be performed in more standardized manner, faster and with less efforts.

The Spermalite (SQA-V) is a new analytical device for a quantitative evaluation of semen parameters using electro optics to determine concentration and motile sperm concentration (MSC). Motility is classified into the 4 classes A, B, C and D according to the WHO recommendations. The Spermalite is provided with a display, showing a visual impression of the semen sample to be analysed. These video streams can be stored for retrospective evaluation.

In this study results obtained with the Spermalite(SQA-V) are compared with those of the current standard procedure based on the WHO-recommendations. In addition, the between-device performance was evaluated.

Materials and Methods

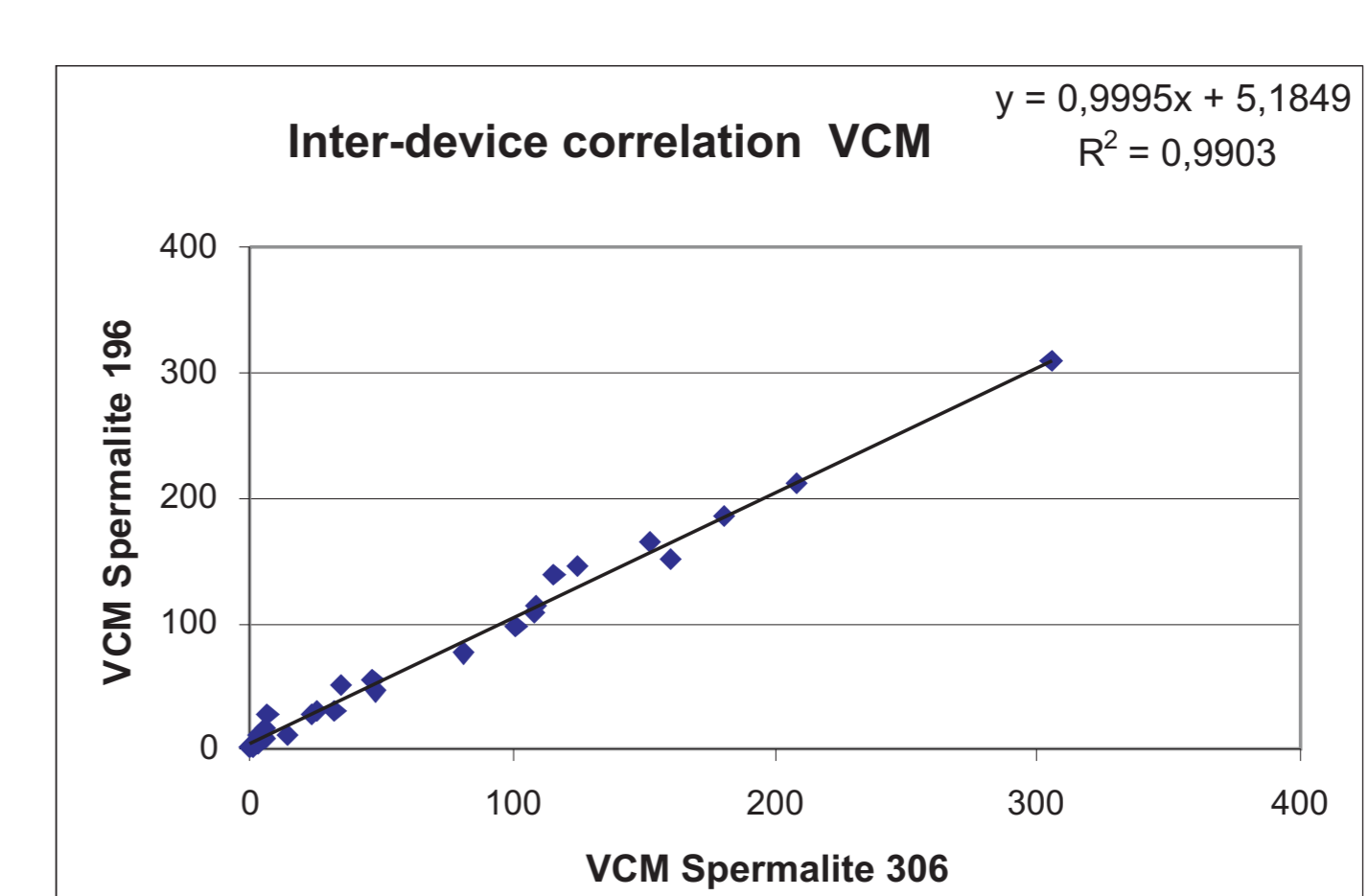
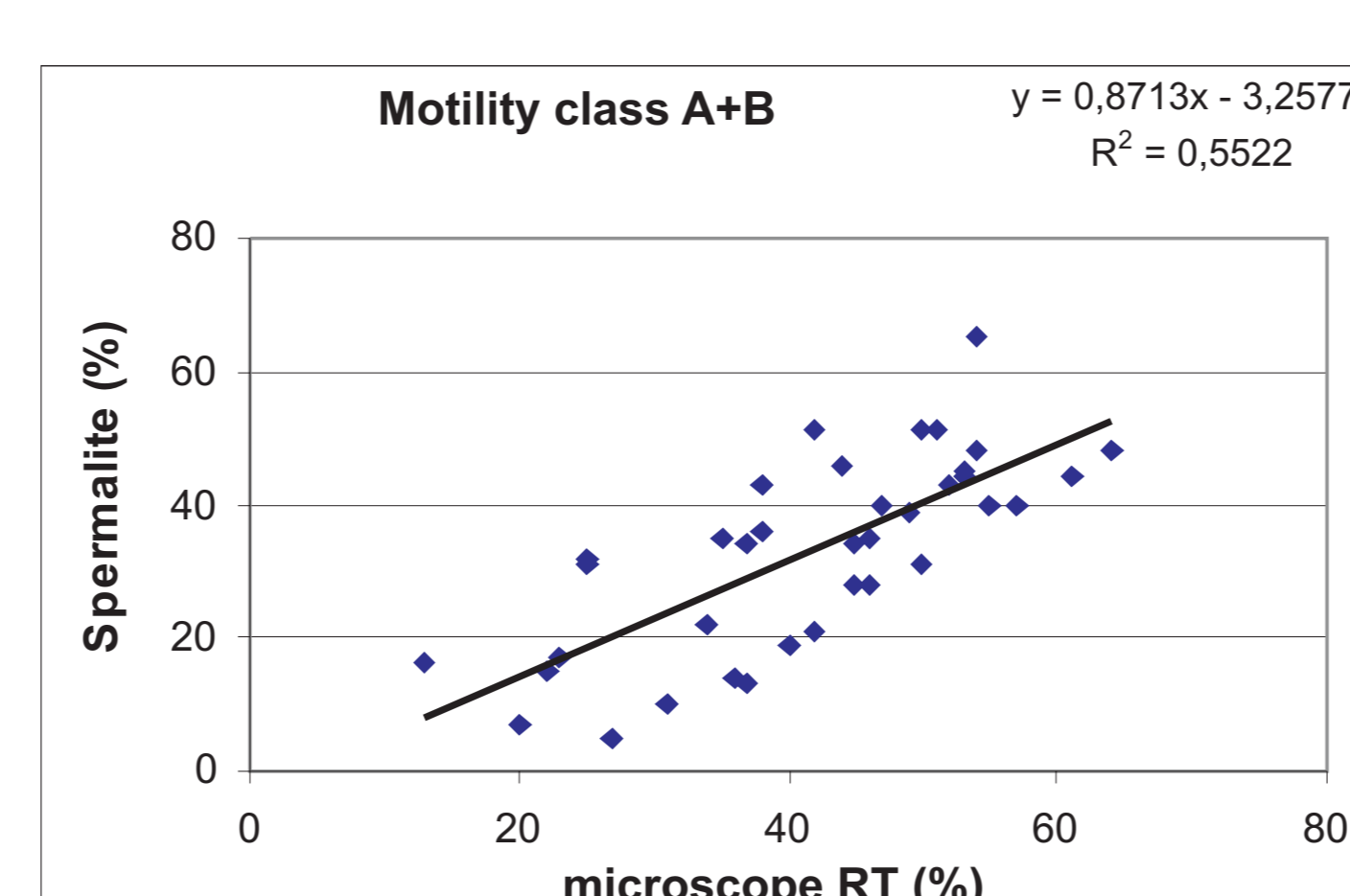
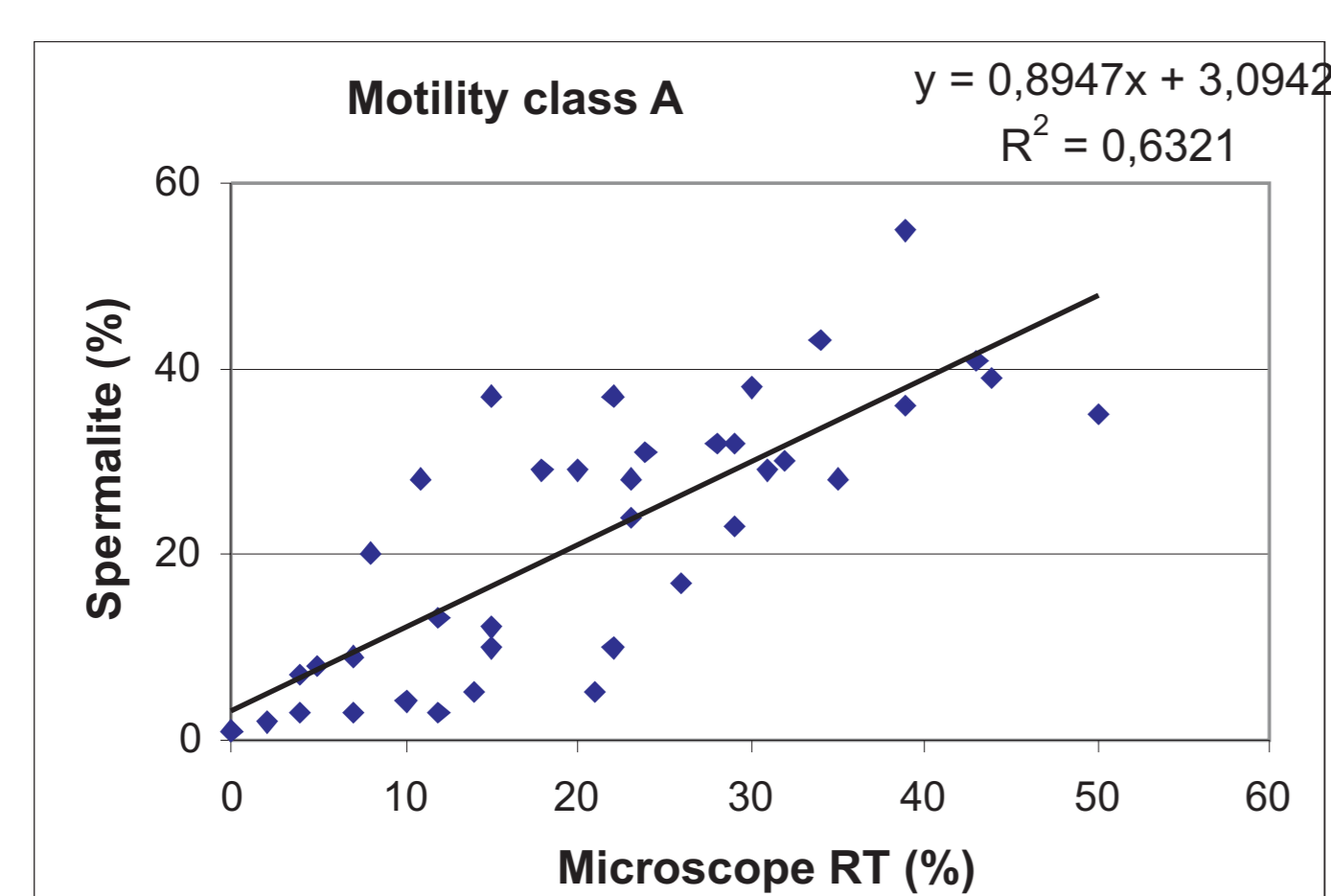
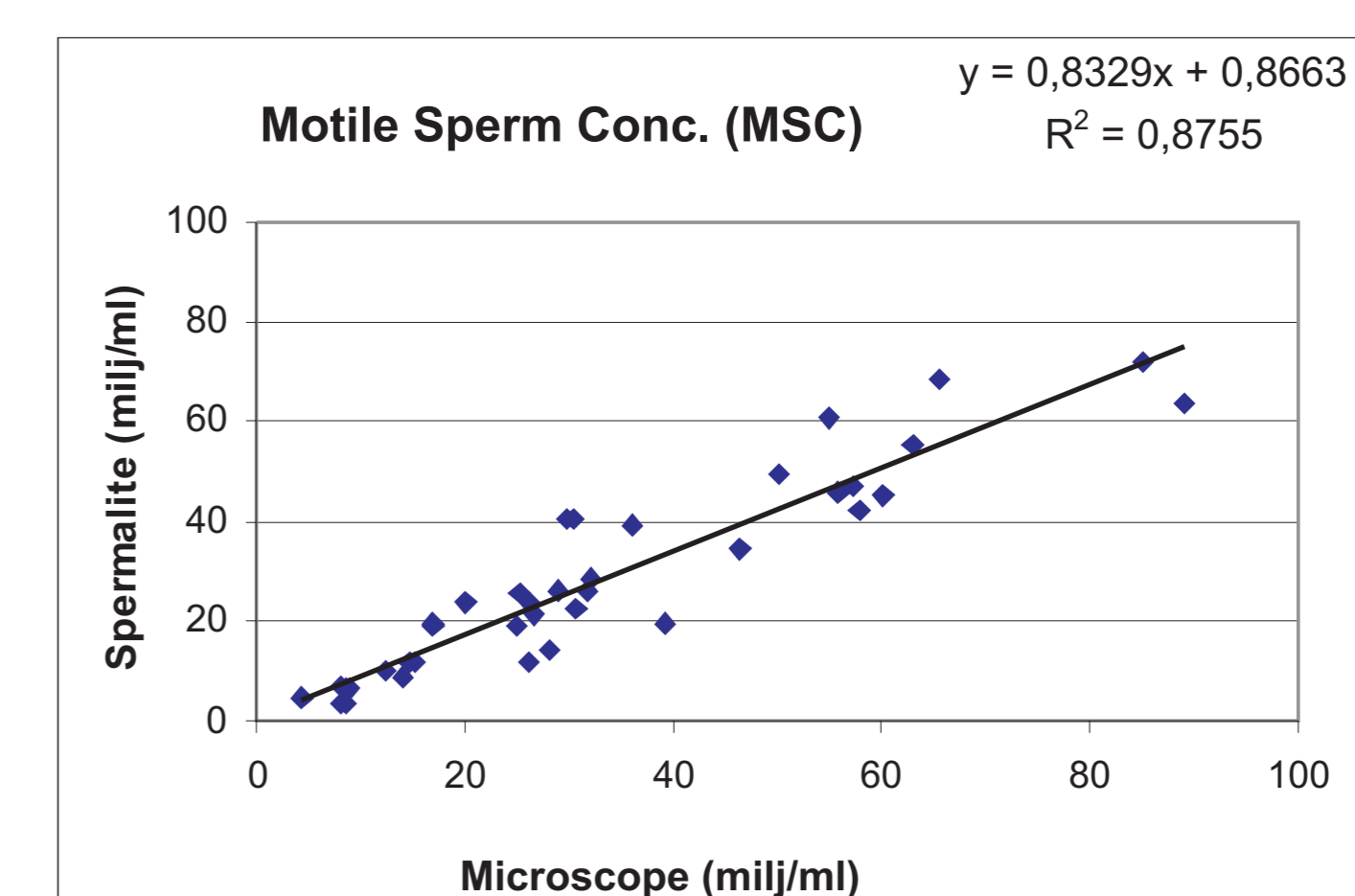
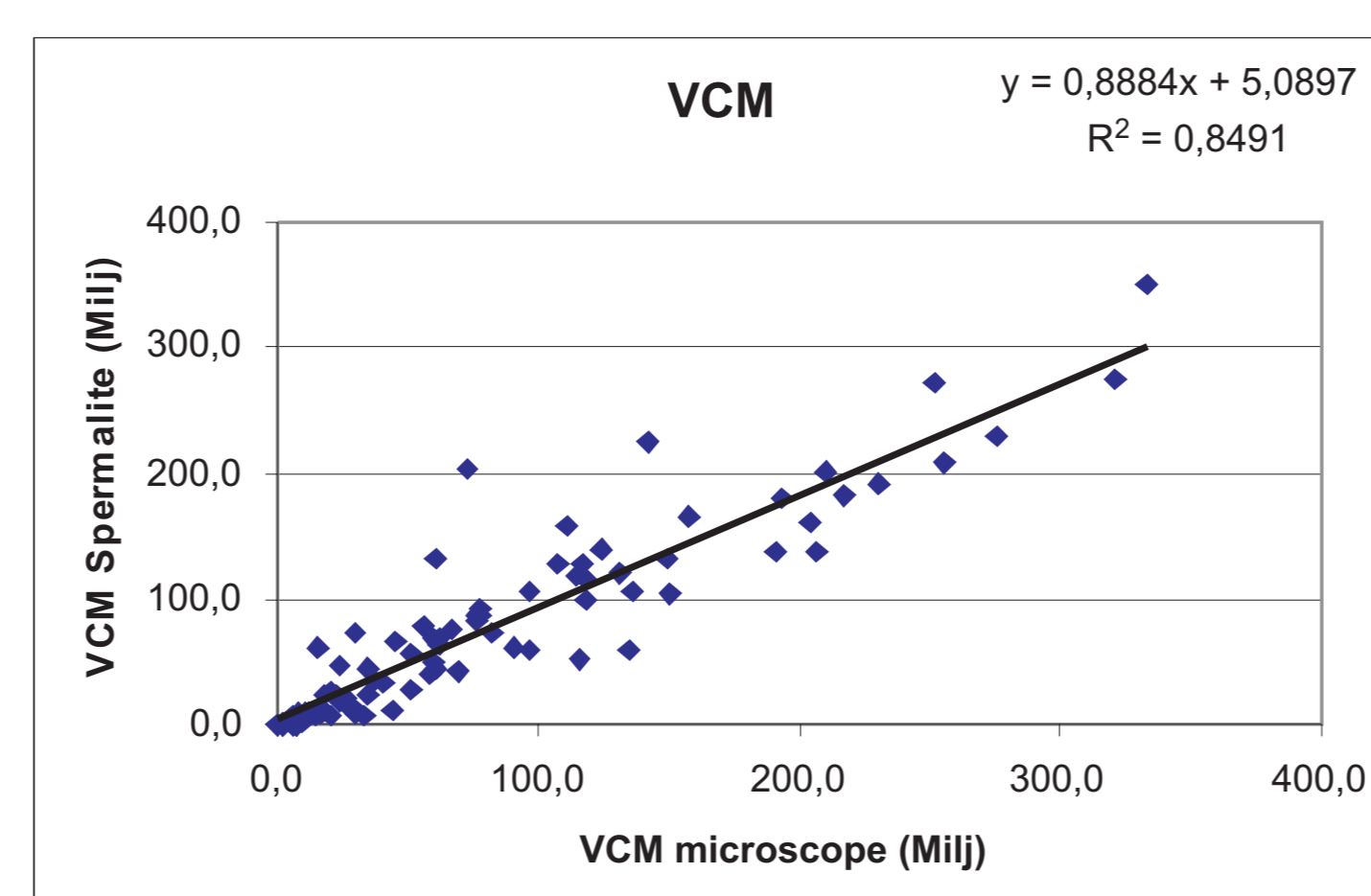
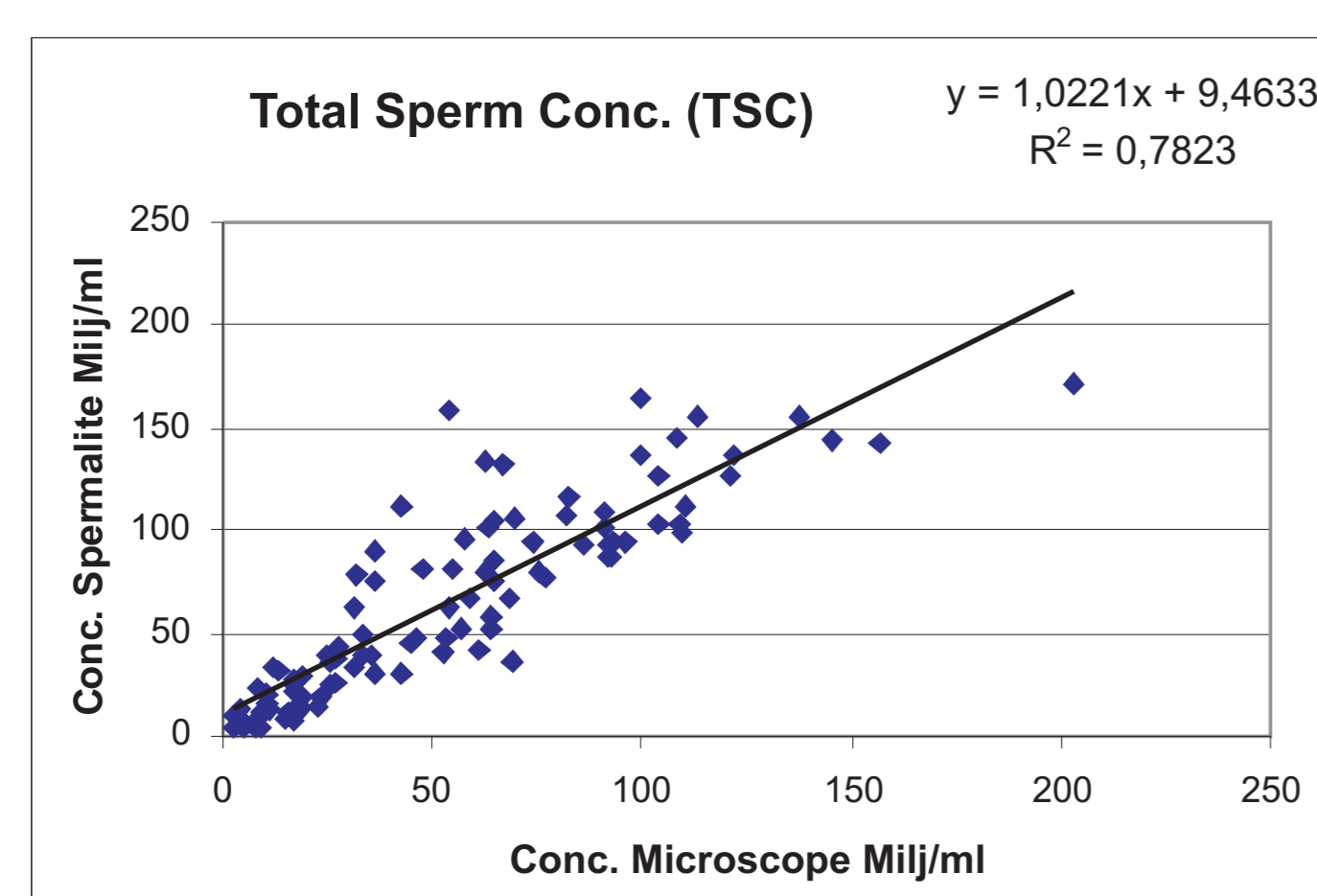
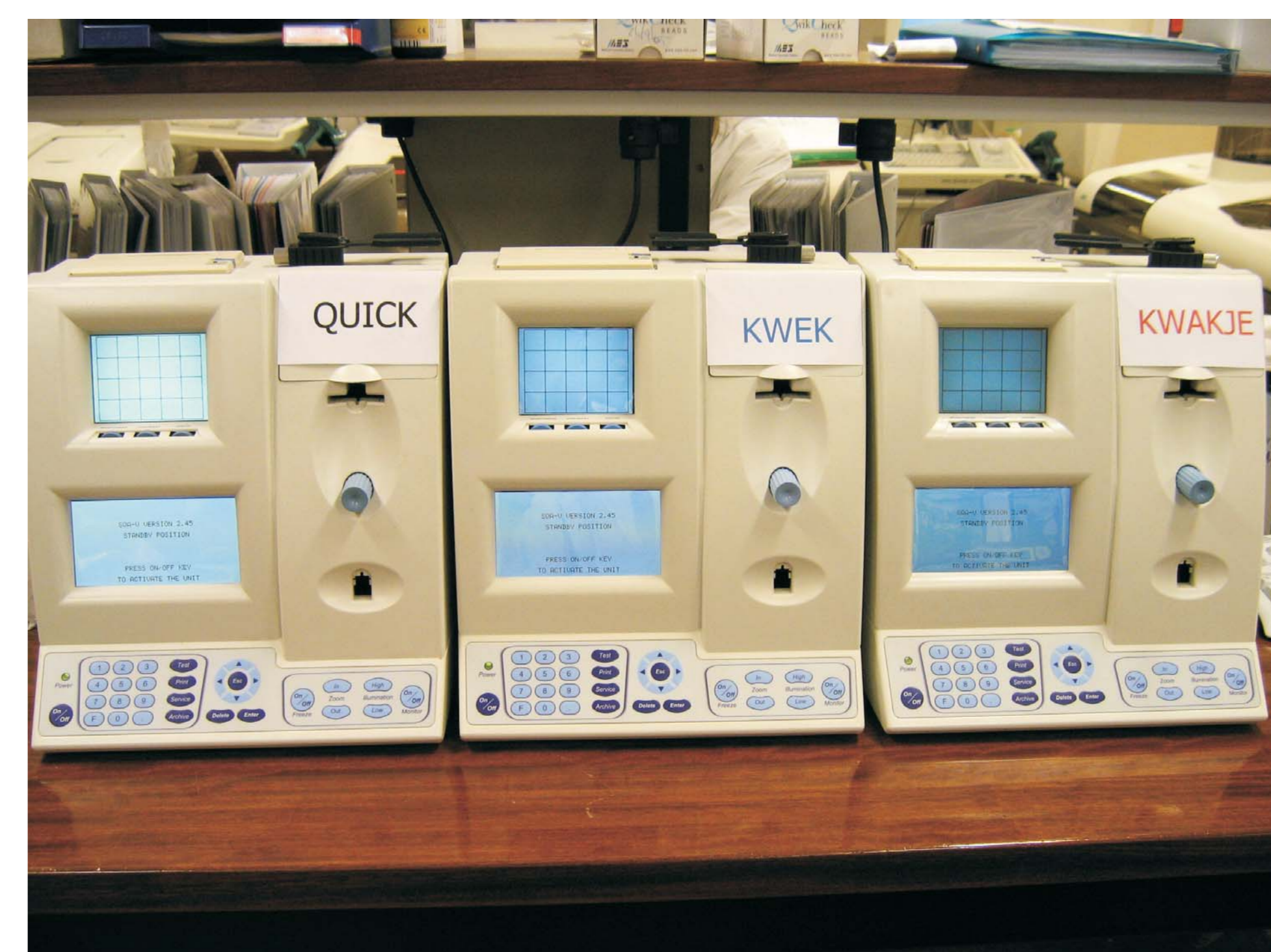
The Spermalite, with latest software version 2.45, DPC/MES, was used according to the guidelines manufacturers specification. Manual determination of sperm parameters were carried out according to the WHO-criteria. Sperm motility was determined at room temperature by a highly trained technician, whereas sperm count was carried out on a routine base by a pool of specialized technicians (n = 12). Based on the Dutch National SKML quality control scheme the inter-observed reproducibility for sperm count was appr. 30%. Based on the ESHRE EQAS, the CV for the sperm motility score was estimated as below 20% for all classes.

Results

The evaluated parameters are concentration (TSC), motility (A,B,C,D), the motile sperm concentration (MSC) and, derivatives of this, the progressive motile sperm concentration (PMSC) and VCM (PMSC * volume). Also two different Spermalite devices were to analyse reproducibility between devices.

Typically, the coefficient of variance (CV) of results obtained with the Spermalite was less than 10%.

The results show a good correlation of semen analysis by the Spermalite versus the microscopic method for concentration, motility, motile sperm concentration and VCM.



Conclusion

The observed good inter-device reproducibility offer the possibility to standardise and produce comparable results between different laboratories with low efforts with respect to training and standardisation.

With the Spermalite a fast result can be obtained which is very useful for semen analysis and good beneficially used to solve the problem of the poor intra- and inter-laboratory reproducibility seen with the conventional techniques.

References

WHO laboratory manual for the examination of human semen and sperm-cervical mucus interaction. Cambridge University Press, 1999, Cambridge, United Kingdom

