

PERFORMANCE COMPARISON OF FULLY AUTOMATED SYSTEMS BIO-RAD IH-500 VS ORTHO AUTOVUE INNOVA®

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BACKGROUND

Prior to the launch of Bio-Rad's fully automated analyzer IH-500 (Fig. 1) a device comparison was performed with Ortho AutoVue® Innova system to evaluate and optimize sample processing.

Fig. 1: Bio-Rad IH-500



METHODS

The evaluation focused on the comparison of the two systems and sample processing, as well as on the IH-500 device software ergonomics.

A batch-run of 50 samples (45 of which were bloodgroups without, 5 of which were bloodgroups including rhesus formula) was compared on both systems, as well as a continuous sample flow of 19 samples (12 of which were without, 1 of which was including rhesus formula, as well as 4 ABD-confirmation tests).

Furthermore, a batch-run of 30 bloodgroup samples including rhesus formula was interrupted at the time of pipetting the 4th sample in order to reload a STAT sample (bloodgroup including rhesus formula). Another STAT sample (bloodgroup including rhesus formula) was reloaded 10 minutes after the first one, in order to evaluate handling of STAT samples within a routine sample batch.

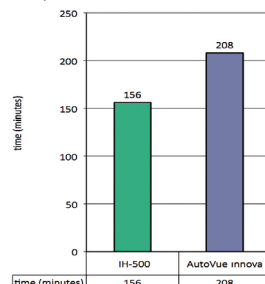
RESULTS 1/2

Testing a batch run of 50 routine samples on IH-500 convinced by a well structured process, granting results about 33.33% faster than AutoVue® Innova (Graph 1).

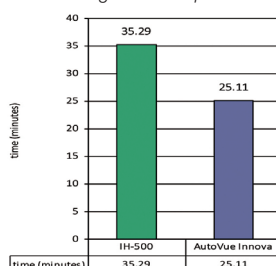
Testing a continuous sample flow revealed that time to result on IH-500 is about 28.85% slower than on AutoVue® Innova, increasing alongside sample count.

(considering discrepant centrifugation times of 10 minutes on IH-500 and 5 minutes on AutoVue® Innova) (Graph 2).

Graph 1: Time to result for a batch of 50 samples



Graph 2: Average time to result for a continuous sample flow with a daily routine testing of 19 samples

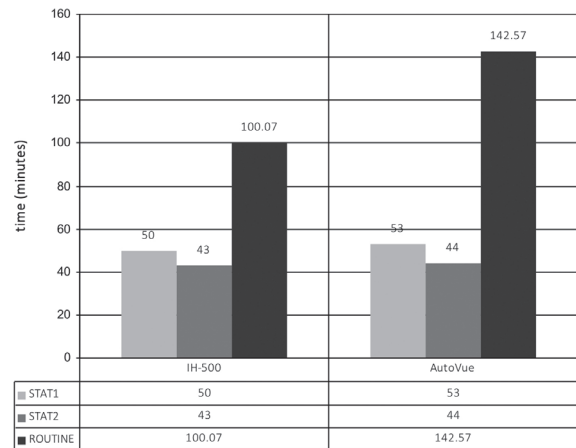


RESULTS 2/2

Interrupting a batch run of 30 routine samples to reload a STAT sample at the time of processing the 4th sample and reloading another STAT sample 10 minutes after the first one showed approximately the same results on both tested systems:

On IH-500 the average time to result for the reloaded STAT samples was 46.5 minutes, on AutoVue® Innova 48.5 minutes (Graph 3).

Graph 3: Time to result for 2 reloaded STAT-samples and a batch of 30 routine samples



CONCLUSIONS

When compared to each other it appears, that the IH-500's strengths lie particularly within batch-run testing, thus making the IH-500 especially suited for blood transfusion service laboratories.

When inserting STAT samples into a batch of routine samples, the IH-500 guarantees faster sample processing and availability of results, thus granting fast time to result for laboratories working with sample batches as well as incoming emergency samples.

When processing a continuous sample flow differences in time to result were encountered to the disadvantage of IH-500. This detriment is settled by faster STAT handling, making IH-500 also suitable for daily routine testing within a hospital or sender laboratory.

By using the ID-System within a fully automated analyzer, excellent result quality is granted. The IH-500's outstanding photo quality eases reading of secured results, while minimizing follow-up costs for additional result control