

Dear Readers,

time is running and the BWM convention of the International Maritime Organization (IMO) will most likely be ratified this year. The needed number of states is already reached, but 0.18 % of the world tonnage is still missing. We believe that the remaining 0.18% will be reached at the Marine Environment Protection Committee (MEPC) meeting in October 2016.

Therefore we would like to give you some details about the report from the BSH (Federal Maritime and Hydrographic Agency), which deals with the results of comparison of different ballast water testing devices.

Best regards,  
Frederike Lohse  
bbe Moldaenke GmbH

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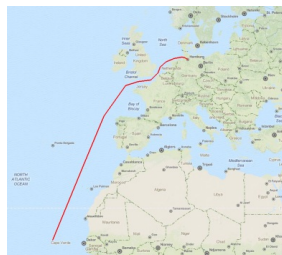
## Report about Ballast Water testing tools published

*10cells is by far the most sensitive device among the tested devices*

bbe participated with the 10cells in an international comparison test of Ballast Water Testing tools.

The test was performed on the German Research Vessel "METEOR" last June by invitation of the BSH, the German authority for the implementation of IMO Ballast Water Convention BWMC.

During a 12 days cruise from Mindelo (Cape Verde) to Hamburg (Germany) the 20 participants were able to test their devices under real conditions.



## bbe 10cells - the No. 1 for ballast water check!

The bbe 10cells proves its strength at the low level of cell numbers needed for ballast water check (Report table 13). The results confirm that 10cells as the most sensitive device on the world market for the measurement of residual living algae cells in a water sample.

So 10cells has high potential to be an accepted device for indicative tests of Ballast Water after the IMO Ballast Water Convention has become into force. This is expected end of 2016.



### Extract of the report

**Table 13.** Density of 10-50  $\mu\text{m}$  organisms in potable water across both trials.

Analytic Device	Density (individuals/mL)	
	Mean	$\pm$ SD
BallastCheck2	2.9	$\pm$ 2.5
10cells	0.2	$\pm$ 0.1
Bulk FDA	6.5	$\pm$ 6.0
Flow cytometry*	39.8	$\pm$ 29.4
Hach fluorometer**	0.5	$\pm$ 0.0
Microscopy	0.3	$\pm$ 0.3
Satake Pulse Counter	1.3	$\pm$ 2.2

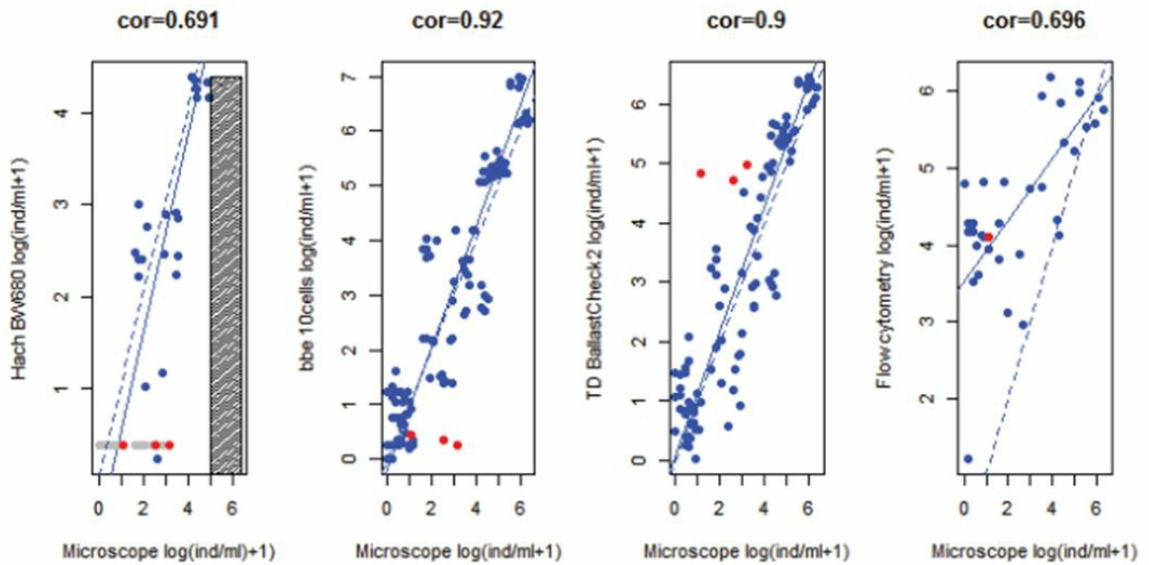


\* indicates that the individuals were non-viable

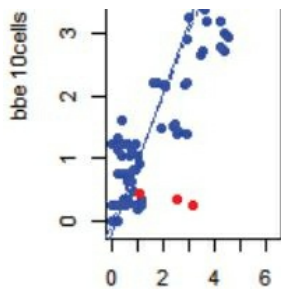
\*\* indicates that all samples were below the detection limit of the device

Furthermore the 10cells shows the highest correlation compared to the classical but laborious microscopic analysis (Report figure 7). On board advanced techniques as with the 10cells will overcome the classical counting approach.

Extract from Report, Figure 7



The red dots show the UV-treated samples. The low detection limit and the sophisticated measuring principle of the 10cells enable the user to analyse ballast water quick and easy at the requested measurement range.



The need and the intensity of ballast water treatment systems can be controlled with the 10cells safely. The use of 10cells helps to increase the effectiveness of treatment facilities and thus reduce costs.

***The bbe 10cells was the only indicative device in the test, that was able to verify the success of the UV-treatment of the ballast water.***

✓ The whole report you will find here ..

✓ More about the bbe 10cells ...

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