UPDATES FROM NORDVAL INTERNATIONAL

New NordVal Certificate No. 045:

HyServe Compact Dry X-BC for determination of *Bacillus cereus* i foods

Compact Dry X-BC method contains a ready-to-use dry chromogenic medium, and selective agents for the detection and enumeration of *Bacillus cereus.* An aliquot of 1 ml of an appropriate dilution is plated onto a Compact Dry X-BC plate. The incubation conditions tested with satisfactory results in the study, were 30 ± 1°C for 48 ± 2h. *Bacillus cereus* forms blue colonies.

Source: www.hyserve.com

In 2012, the method was tested in two extensive comparison studies by CCFRA Technology Limited, Chipping Campden. In 2013, Campden arranged the collaborative validation trial with nine participating laboratories. The method has been compared with ISO 7932:2004: Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of presumptive *Bacillus cereus* – Colony count technique at 30°C.

Altogether, over 300 samples of various food categories were analysed, including samples of meat, fruits, vegetables, dairy products, bakery products, and other products. Laboratories reported that it was easier to read the formed colonies on X-BC than on the agar described in ISO 7932:2004. The blue colonies on X-BC appeared more distinctly. The sample levels yielded satisfactory precision from 1.5 log cfu /g and higher.

For the vast majority of the samples in the comparison studies, somewhat fewer colonies were counted on the X-BC than on the agar described in the reference method, i.e. it seemed that the alternative method had a systematic negative bias. This was also true in the collaborative validation study, where nine laboratories enumerated *Bacillus cereus* in dairy products using both the reference method and the X-BC. The results are given in the table and figure on page 8. The median of the samples of the low, medium and high level of *Bacillus cereus*, were slightly lower with X-BC (red squares in the figure) than the median of the results obtained by the reference method (blue squares in the figure). However, since the results of X-BC fall within the confidence interval of the results with the reference method, the negative bias is not statistically significant. Results obtained by the two methods will be overlapping, and hence it can be concluded that the alternative method provides results equivalent to those of the reference method.

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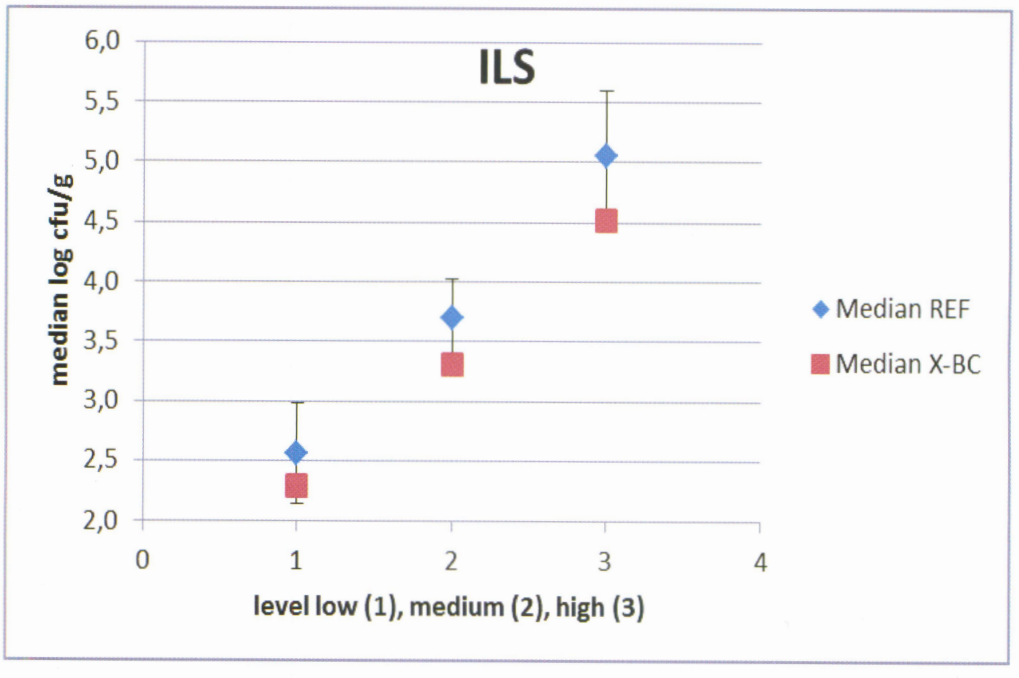
The table and figure below illustrate the results of the collaborative validation (Inter-Laboratory Study, ILS). This shows that the results obtained using the alternative method, X-BC, fall within the confidence interval (± $2s_{SR}$) of the results obtained using the reference method. The results are given in log cfu/g. Nine laboratories participated in the validation.

	ISO 7932		XBC		Bias
Level	Median (log cfu/g)	$2s_R$ (log cfu/g)	Median (log cfu/g)	s_R (log cfu/g)	(log cfu/g)
Low	2.56	0.422	2.29	0.112	-0.27
Medium	3.70	0.322	3.31	0.140	-0.39
High	5.05	0.543	4.52	0.242	-0.53



NordVal Certificate No. 045 contains the results from all the validations of the X-BC, which form the basis of the NordVal approval. The certificate is available at www.nmkl.org.

Further information about HyServe and Compact Dry X-BC is available at www.hyserve.com.