Livsmedelsverket
Swedish Food Agency

1 April 2021 Dnr 2017/01740

Science Division
Department of Biology

Reference material for food microbiology analyses

This reference material is designed for internal quality control of analytical work at food microbiology laboratories. After reconstitution, the test material can be used for control of quantitative food microbiology analyses, as well as for direct or indirect quality control of microbiological media.

Designation: ***RM Food 2017:8***
Date of production: 2017-02-08
Manufacturer: National Food Agency, Sweden
Storage: -18 °C or lower
Expiry date: March 2022

Table 1. Microorganisms included in the material

Microorganism	Strain*
Penicillium roqueforti	SLV-510
Cladosporium cladosporioides	SLV-488
Saccharomyces cerevisiae	SLV-375

* Internal strain identification number, National Food Agency

Quality control

The reference material is tested for homogeneity and stability at regular intervals at the National Food Agency.

Preparation of sample

Reconstitute the vial content in 4 × 1 ml room temperature peptone water (0.1 %) without NaCl. Transfer the suspension to 100 ml peptone water (0.1 %) without NaCl. Mix carefully and let the suspension rest for 30 minutes before performing the analyses. The final 104 ml corresponds to the undiluted sample that is to be analysed.

Analyses

The analyses should be performed in accordance with the methods used by the individual laboratory.

Control limits

The *initial control limits* for each analysis are shown in Table 2. They can be used as provisional intervals until the laboratory has determined its own control intervals. The

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intervals are calculated from measures of dispersion, and are obtained from analyses at the National Food Agency using the methods in Table 2, and from prior results of analyses performed by 10 laboratories in collaboration with the National Food Agency. The concentrations are expressed in logarithmic units, and the intervals state the upper and lower limits within which a single result should be obtained in order to be considered correct (with 95 % probability). The calculations of the control limits are currently under evaluation, and might be slightly amended.

Laboratory-specific intervals for a given analysis are usually smaller than the initial intervals given in Table 2, and laboratories are therefore encouraged to construct control charts by use of their own intervals. Such charts can be designed according to instructions provided at our website (below). If the sample volume or the volume used for reconstitution differs from what is recommended in these instructions, laboratory-specific mean values and control limits should be calculated as soon as possible. Results from all persons that normally perform the analysis should be included in the control charts.

Table 2: Mean values and initial control limits for RM Food 2017:8

	Mean value[a] (log_{10} cfu/ml)		**Control limits[b] (log_{10} cfu/ml)**		**Reference method**
Analysis	**DG18**	**DRBC**	**DG18**	**DRBC**	
Total count moulds	3.95	3.91	3.6 - 4.3	3.6 - 4.2	NMKL no. 98:2005
Total count yeasts	4.07	4.06	3.7 - 4.5	3.7 - 4.4	NMKL no. 98:2005

DG18: Dichloran Glycerol agar, DRBC: Dichloran Rose Bengal Chloramphenicol agar

[a] Mean value from analysis of 10 vials at the National Food Agency.

[b] Initial provisional control limits based on measures of dispersion from previous studies at the National Food Agency, as well as previous results from 10 laboratories in collaboration with the National Food Agency.

Control charts

Instructions for the construction of control charts are available at our website: www.livsmedelsverket.se/en/RM-micro.

Information

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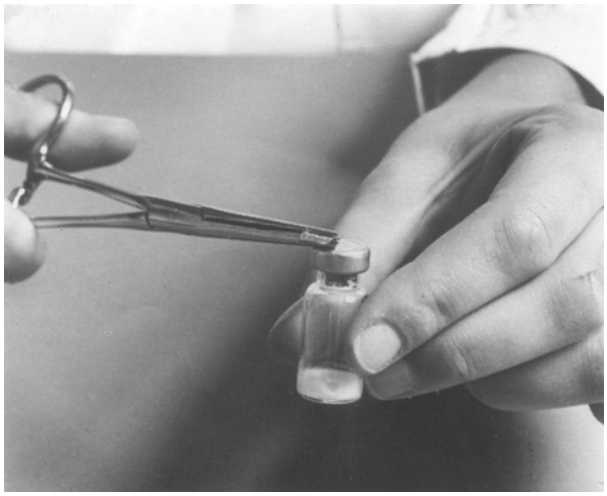
Reference materials - Food

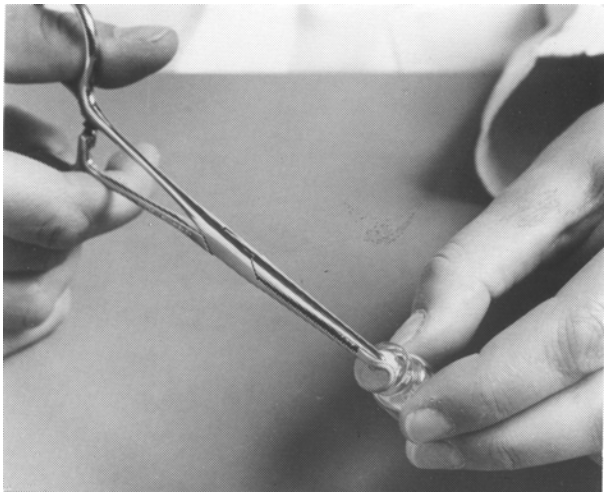
Sample preparation of freeze-dried cultures in glass vials

Total volume 104 ml



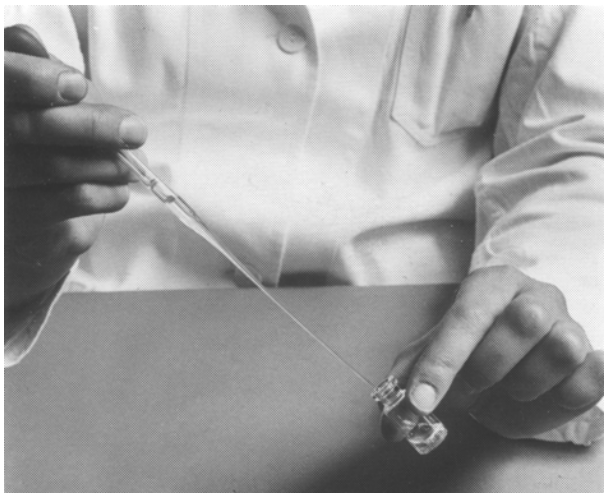
1. Twist the flap on the upper side of the aluminium cap in the direction of the arrow.

2. Remove the aluminium cap.



3. Remove the rubber plug.

4. Carefully burn the opening of the vial over a gas flame.



5. Add 1 ml diluent with a sterile pipette.

6. Let the content dissolve (1-5 minutes).

7. Using a sterile Pasteur pipette, transfer the suspension to a sterile bottle containing 100 ml room temperature diluent.

8. Add another 1 ml and carefully rinse the walls of the vial with the Pasteur pipette.

9. Transfer the suspension to the bottle

containing 100 ml diluent.

10. Repeat steps 8 and 9 two more times with the same Pasteur pipette.

11. After thorough intermittent mixing, the 104 ml sample is ready for analysis.

12. Perform the analyses within 60 min.

Note: Reference material that contains moulds should rest for 30 minutes before analysis.