

MICROBIOLOGICAL MONITORING OF ENVIRONMENTS

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Sampling air and surfaces for microbiological purposes gives helpful information in many different environments.

In Hospitals where the contact spread of nosocomial infections can be a serious problem, microbiological studies of personnel and the environment can provide useful information. Data collected about the "status of hygiene", or as a support for investigations for specific problems or for proficiency testing of Total Protective Environments, can assist in reducing this problem.

Validation of air systems used in drug manufacturing facilities to preserve the environmental quality substantiates the systems correct and continuous operation, while the effectiveness of the sanitization of aseptic processing areas, can be evaluated for filtered surfaces. Good Sanitation Practices in food and feed industries require that contamination of processed goods be eliminated, from equipment, containers, and air, in order to avoid both colonization with spoilage organisms and dangerous entry of pathogenic bacteria. Testing of raw materials, and the final products aside, and testing of the processing environments may be useful not only to check an element which is significant in the maintenance of food quality, but also to demonstrate sources and ways of dissemination of the organisms incriminated in processing accidents.

Procedures for microbiological monitoring of environments are based on suitable hardware and software devices. The hardware is the same for whatever fields of application, from hospitals to pharmaceutical, cosmetics, food and feed plants. A volumetric air sampler, like the "SAS" is needed to produce quantitative data that is easily readable. The SURFAIR plates, filled with agar to be pressed onto the test area, may be used for the determination of the number and type of microbes on surfaces. Depending on the specific needs and the sampling site, a specific protocol, issued by the laboratory, should define the scope, methodology, acceptance and rejection levels and recording procedures which may vary according to the field of application. Different primary culture media (Tryptic Soy Agar, Plate Count Agar) may be used for the general cultivation of total viable organisms from air and surface samples. Selective media, which contain inhibitors capable of suppressing the growth of certain organisms, but allowing the growth of one or more desired types, are suggested whenever the biological hazard is restricted to a definite agent.

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