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P1. MICROBIOLOGICAL EFFICACY TEST METHODS OF DISINFECTANTS

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Disinfection process is required in every area where microbiological contamination and infection risk is present, especially in medical sector, food, veterinary and general common living areas hence many disinfectants and antiseptics are being produced for different purposes. Disinfectants are made up a large group of biocidal products. Depending on the chemical properties of active substances, targeted microorganisms may differ While some disinfectants are effective in a large spectrum, others are effective against specific microorganisms.
Detection of microbial efficacy of disinfectants is essential for providing human and environment hygiene and decreasing of contamination and infection risks.
Standard methods were developed for microbiological efficacy tests by international standardization organizations like CEN, AOAC, AFNOR etc. Disinfectant efficacy tests are performed in 3 phases. Antimicrobial efficacy of the disinfectants is analyzed in first phase which involves preliminary screening tests. If the disinfectant has a antimicrobial effect, it is proceeded to second phase which are also performed in vitro within laboratory. In these tests, real life applications are simulated, thus more realistic results are obtained. In this phase, the effective concentration and the application procedure of the disinfectant is determined. Third phase tests includes field tests and demonstrate actual performance of the disinfectant. Application of last phase tests are not as common as the previous phases since overall standardization is not achievable.
Studies involving disinfectant tests are based on disinfection kinetics. Tests show that disinfectant efficacy is related with disinfectant concentration and contact time. In recent years practical applications were being developed in this area. In these tests, different microorganisms, interfering substances and contact times are used according to products' application purposes. Therefore these applications give more realistic results.
Accurate applications of disinfectant efficacy tests can only be provided through analysis laboratories that has quality infrastructure. The employment of qualified personnel, use of standard methods and their validations and verifications, usage of reference cultures, internal quality control practices and internal audits, will provide reliable and correct results.