

innovations

from the University of Vermont

TITLE: RAPID ASSAY METHOD AND DEVICE FOR DETECTION AND ESTIMATION OF MICROBIAL CONTAMINATION OF SUBSTRATA

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DESCRIPTION: Current surface sampling techniques are limited in their capacity to retrieve all types of contaminants, risking the possibility that a contamination will go through undetected. All microbial particles (spores, conidia, vegetative microbial cells etc.) have strong adhesive properties, and it can be difficult to remove them using traditional wash or imprint methods. Some substrata, especially soft or gelatinous materials, can pose additional difficulties for the reliable detection of microbial contamination.

These technologies provide a detection system with a simple, adhesive tape-based, sampling system capable of rapidly picking off even the strongest held particles, but gentle enough for softer and more delicate surfaces. The adhesive tape has a round form with a size conformable to the inside diameter of standard Petri dishes and one half of the adhesive tape has perforations for the growth and development of aerobic microorganisms. After contact with the surface to be investigated, the adhesive tape is placed in the Petri dish, containing growth media that provides a suitable environment for the growth of microorganisms. The system is self-contained and simple to use.

ADVANTAGES: This microbe detection system provides a more thorough and trustworthy assessment of aerobic and anaerobic microbial contamination through its capacity to pull more numbers and variety of microbes off the substrata, as well as through its ability to test all types of surfaces. After incubation of the Petri plates, the capacity of this method will allow a more accurate estimation of the degree of contamination present in the original tested substrata. The efficiency of the sampling system allows for more rapid testing and multiple analyses in a short amount of time. In addition, this detection system offers a better capability for identification of the type and intensity of contamination, through the ability of growing sampled surface material on different media as well as providing colonies for DNA analysis.

PATENT STATUS: Patent pending

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