

METAGENOMICS FOR ENVIRONMENTAL AND INDUSTRIAL MICROBIOLOGY

RINKOO D. GUPTA AND RAKESH SHARMA*

Our environment is a vast reservoir of a large number of microorganisms and only a minute fraction of them can be cultured. Metagenomics is a culture-independent genomic and functional analysis of this unculturable microbiota. Metagenomics, being a pool of genomes of highly diverse unculturable microorganisms, has increased the probability to discover genes and pathways for several new enzymes with high and specific catalytic properties, bioactive compounds and bioremediation processes. Metagenomic studies are mainly based on three types of analyses- a function-based screening of metagenomic libraries for an expressed trait, a sequence-based screening of metagenomic libraries for particular DNA sequences and large-scale sequencing and in-silico analysis of the data for particular traits. This review aims to highlight the recently developed metagenomic approaches to the environmental and industrial microbiology.
