Application of Microbiology to improve mechanical properties of soil and concrete = Aplikasi mikrobiologi dalam meningkatkan properti mekanik pada tanah dan beton

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Abstrak

Uses of microorganisms in the civil engineering domain have been developed since several years ago. From several researches, microorganisms produced calcite was able to improve the mechanical properties of the soil and concrete. In the soil, they could increase the bearing capacity by producing calcite that would fulfill the pores of soil [Ivanov, 2008]. By reducing the pores, the soil will be more compact and it can increase its capacity. On the concrete material, it could be used to fix the cracking in the concrete or it could [Achal et.al. 2010] be used in mix design which able to improve the strength of concrete. The type of the bacteria which can produce calcite is from genera Bacillus. Growth of Bacillus subtilis studied in this paper was observed in laboratory of Microbiology at Universite Lille 1.