

ISOLATION AND SELECTION OF CELLULOSE DECOMPOSE BACTERIA UNDER PINE FOREST CANOPY IN VIETNAM

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Summary

As of December 31, 2019, the national forest area was 14,609,220 hectares, of which: natural forest was 10,292,434 hectares, plantation forest was 4,316,786 hectares (pine forest was about 400,000 ha). Using cellulose decompose bacteria helps decompose quickly flammable materials, contribute to improving soil fertility and limiting the possibility of pine forest fire. As a result, a total of 53 bacteria strains were isolated, of which 15 strains were isolated in Soc Son, Hanoi, accounting for 28.3%; 12 strains were isolated Hoanh Bo, Quang Ninh, accounting for 22.64%; 8 strains were isolated in Tinh Gia, Thanh Hoa, accounting for 15.1%; 12 strains were isolated in Loc Binh, Lang Son, accounting for 22.64%; 6 strains were isolated in Trung Khanh, Cao Bang, accounting for 11.32%. Including 29 strains capable of resolution medium that containing CMC substrates (full name of CMC is carboxymethyl cellulose - a derivative of cellulose with chloroacetic Acid), accounting for 54.72% and 24 strains not capable of resolving (accounting for 45.28%). Molecular genetic analysis based on 16S rRNA gene sequence: SSK (*Bacillus subtilis*); SSK9.2, SSK10 (*Bacillus megaterium*). The results of pine needles decomposition of 3 strains SSK9.2, SSK10, SSK in potted condition after 180 days reached 41.72 - 61.26%; the control formula reached 12.06% only.

Keywords: *Pinus, cellulose decompose bacteria, flammable material.*