

Tractive performance of LGP-30 wheeled vehicle during straight motion on Sepang peat terrain in Malaysia

ABSTRACT

The tractive performance justification of an off-road vehicle is so important that it ensures the vehicle mobility over the unprepared peat terrain. Tractive performance of Low Ground Pressure (LGP-30) wheeled vehicle is investigated on the low bearing capacity moderate peat terrain in Malaysia. The simulation results showed that the vehicle sinkage is more than the critical sinkage value of 100 mm, ground contact pressure is more than 17 kN/m², and rolling motion resistance due to terrain compaction is very often more than the tractive effort of the vehicle. The vehicle was tested on the unprepared moderate peat terrain after increasing the tyre-terrain interface by decreasing the tyre inflation pressure of 5%, 10% and 15% respectively. The vehicle was found to traverse on the terrain smoothly when the tyre inflation pressure was decreased by 15%.

Keyword: Peat terrain; Kinematics model; LGP-30 wheeled vehicle; Tractive performance.