

Whole body, Arm-Hand Vibration and Performance Drivers Tractors during Conservation Tillage under different Velocity and Soils

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Abstract

The Experiment was carried out to determine the level vibration transfer in three axes Horizontal X, Lateral Y and Vertical Z direction to seat driver tractor, Vector sum of vibration and Daily Vibration Exposure (8 hours) in seat driver tractor, and vibration in steering wheel tractor, Heart Rate, Systolic and Diastolic blood pressure and temperature were measure to all Drivers before and after used Chisel plow in operation tillage. Statistical analysis system was used, Split-Split Plot Design under Randomized Complete Block Design, Three factors were used in this experiment included Two types of Soil Moist and Dry soil which represented main plot, Three Velocity Tractor was second factor included 1.6,3.5 and 5.4 km/hr and Three Drivers Tractor (D1, D2 and D3) was third factor. Result show higher levels Vibration in all direction in seat and steering wheel tractor when tillage dry soil and used high velocity tractor, heart rate increasing after operation tillage but no change in blood pressure and slight increasing (but still normal) in temperature.

Keywords: Conservation Tillage; Chisel Plow; Soil; Vibration; Performance Driver; Velocity Tractor.