

Kittikhun Prahsertkan 2009: The Study on Factors Affecting Performance of Soil Shakerator. Master of Engineering (Agricultural Engineering), Major Field: Agricultural Engineering, Department of Agricultural Engineering. Thesis Advisor: Associate Professor Prathuang Usaborisut, Ph.D. 114 pages.

In the study on factor affecting performance of a shakerator, the shakerator consists of three blades attached to a main frame and an unbalanced mass shaft, which was driven by PTO of a 87 Hp tractor. The experiment were conducted under field conditions in a sandy clay loam soil with a moisture content of 12.32%(db), dry bulk density of 1.62 g/cm³ and cone penetration resistance of 2.5 MPa, at three forward speeds (1.39, 2.09 and 3.43 km/h), four frequencies of oscillatory (0, 9, 11 and 13 Hz), and two amplitudes of oscillatory (y=6.17, z=5.47 mm) and (y=10.07, z=8.13 mm). By comparing to the non-oscillatory mode of the subsoiler, it was found that a maximum reduction of drawbar pull was by 19.26% and, at a frequency of 13 Hz, maximum soil disturbance increased by about 28.8%. Drawbar pull and total power increased with increase of forward speed. As a conclusion, forward speed significantly. Affected drawbar pull and total power while frequency of oscillatory and amplitude of oscillatory significantly affected drawbar pull and soil disturbance.

Student's signature

Thesis Advisor's signature