Abstract

The presence of a large number of marginal and small land holdings in India has rendered the power tiller to be the most suitable farm equipment for field operations, in view of its compact size, profitability and versatility, but the transport work which is also required to carry the farm produce is yet to be proved. Keeping these in mind, user friendly software was developed for predicting the haulage performance of power tiller to meet requirements in educational and research organizations. The developed software requires input parameters such as power tiller,
trolley and operating conditions. The developed software was validated by conducting experiments with a 6.7 kW power tiller using a suitable trolley on tarmacadam road at various payloads and road slopes. The draft, slip, fuel consumption and speed were measured and other haulage performance parameters were calculated based on measured values to validate the developed software. The results simulated by software indicate lower draft and slip in the range of 1-23 and 2-9% with respect to the experimental data, however, higher transport productivity was in the range of 3-12%.

References

Index Terms

Computer Science

Applied Sciences

Keywords

Software    power tiller    trolley    tarmacadam road    transport productivity    transport efficiency