



RESEARCH PAPER

Operator workplace design compatibility: A study on mini tractor

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Abstract : Small tractor for agriculture is India's most trending tractor segment for farmers. Looking to the mini tractor industry in India, there is a need to study the ergonomic aspects of mini tractor for operator's better safety, comfort and higher efficiency. Study was conducted in which the tractor workplace configurations of 8 different mini tractor models were measured using different measuring scales. The location of different mini tractor seat and control locations were calculated considering the biomechanical and anthropometric measurements. These values were given as design values for mini tractor operator's workplace design. The ergonomic evaluation of workplaces of 8 different mini tractor models was carried out in laboratory as well as in the field. Studies on evaluation of the optimum location of controls resulted in steering column angle of 70° with horizontal, foot pedals (clutch and brake) distance of 70.5 cm from SRP and the draft control lever distance of 28.6 cm from seat reference point (SRP). Heart rate was significantly influenced by different mini tractor models. It was found that the value obtained from the different mini tractor workplace configurations should be near to design values so that the operator can operate it with efficiently and comfortably.

Key Words : Ergonomics, Mini tractor, Tractor workplace design, Physiological, Subjective evaluation

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