

Ergonomic assessment of selected intercultural hand tools for women farm workers

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■ **ABSTRACT** : Comparative study of three types of manual weeder namely wheel hoe, crescent hoe and dry land weeder were ergonomically evaluated for women farm workers. The different physiological parameters like heart rate, oxygen consumption, energy expenditure and posture parameters like average twisting velocity, maximum sagittal flexion, maximum lateral velocity, body part discomfort and overall discomfort were evaluated for operator operating each weeder. The highest heart rate, oxygen consumption and energy expenditure of worker were observed in the operation of wheel hoe. Working with wheel hoe and dry land weeder were categorized as “heavy work” with heart rate 114 and 112 beats per minutes, respectively. The subjective evaluation of body part discomfort and overall discomfort score for subjects operating wheel hoe were higher among all the weeder (31.01 and 2.51). The field capacity of wheel hoe was highest ($150\text{m}^2\text{h}^{-1}$). The ergonomic evaluation of wheel hoe, crescent hoe and dry land weeder were done and found that field capacity and energy expenditure were high; therefore there is need of modifying the existing weeder to make it compatible for women farm worker. Modifications in the existing weeder according to anthropometric and physiological parameters of female workers can reduced the energy consumption and body deviations between work and thus enhanced work output.

■ **KEY WORDS** : Ergonomics, Physiological parameters, Manual weeder, Women farm workers

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