

## Ergonomical evaluation of manual and power operated weeders in dry land condition

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■ **ABSTRACT** : Weeding operation is an important among field operations, which affects the yield 30 to 60 per cent due to delay and negligence in operation. Drudgery involved in weeding operation increases stress on the worker causing increase in heart rate and oxygen consumption. The main focus of the study was to evaluate ergonomical and mechanical parameters of power weeder and wheel hoe. The estimation of oxygen consumption rate (OCR) by measuring the energy expenditure rate (EER) is a fairly accurate and acceptable method. The heart rate of workers varied from 109.47 to 130.66 beats/min by using power weeder and 130.33 to 147.52 beats/min by using wheel hoe. The oxygen consumption rate of workers from 0.873 to 1.302 L/min with power weeder and 1.389 to 1.738 L/min with wheel hoe. The actual field capacity of 114 and 208 man-h/ha were observed for power weeder and wheel hoe, respectively. The weeding efficiency of power weeder and wheel hoe were observed to be 8 and 75 per cent, respectively. The maximum value of weeding efficiency (8%) was observed in case of power weeder.

■ **KEY WORDS** : Oxygen consumption rate, Energy expenditure rate, Field capacity, Weeding efficiency

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