

## Field performance evaluation of L-shaped blade rotary tiller cum inter row weeder

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■ **ABSTRACT** : Weeding is one of the most difficult tasks on an agriculture farm, especially so in the humid tropical regions. Due to lack of suitable technology weed pose a major problem in Indian agriculture. A self-propelled rotary tiller machine was designed and developed for weeding purpose without damaging of plants. It comprises of 'L-shaped' blades mounted on flanges that was affixed to a shaft driven by a 5 HP diesel engine. The field performance evaluation of machine was calculated based on theoretical field capacity, effective field capacity and field efficiency and was found to be 0.26 ha/h, 0.19 ha/h and 73 per cent, respectively. The mean mass diameter and power requirement was minimum 1.64 mm and 1.05 kW at  $\lambda$ -ratio of 5.65 and was maximum 2.24 mm and 1.25kW at  $\lambda$ -ratio of 3.26, respectively. The 16 per cent less power required when the operating speed was 0.64 m/s. The average weeding efficiency of machine and fuel consumption was obtain 94 per cent and 1.6 l/h (8.42 l/ha). The operation cost was calculated 184 Rs./h (970 Rs./ha).

■ **KEY WORDS** : Rotary tiller, L-shaped, Performance, Weeding efficiency

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