Development of manually operated low cost paddy weeder

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Weeds cause enormous reduction in crop yield. Therefore weeding is one of the important farm operations for agricultural crops. At International Rice Research Institute, the reported loss in yield due to weeds are estimated at 34% in un-weeded plots in transplanted rice, 45% in direct seeded rain fed lowland rice and 67% in upland rice. Different types of weeders are used in different parts of the country. Since a major portion of labour input is spent in weeding operations, it was felt that the technology of weeding should be improved for the benefit of the farmers.

Considering the above facts, a low cost manually operated weeder for paddy cultivation was designed and fabricated using locally available materials. The designed weeder consists of a floater, soil working component with two rotors, frame, and handle.

An experiment was conducted in the paddy field to compare the performances of the developed weeder with Japanese Rotary weeder. Weeding index, working capacity, undamaged crop percentage, performance index and cost of production were considered as criteria for the evaluation of designed weeder.

The results revealed that the weeding index, working capacity, undamaged crop percentage, performance index and cost of production of the designed weeder were 86.3%, 0.08 ha/ day, 96.7%, 606.6 and Rs 1402.00 respectively. Above observations for the conventional weeder were 74.0%, 0.07 ha/ day, 96.8%, 591.6 and Rs 1750 respectively.

Therefore, performance index and weeding index were greater by 2.5% and 16.6% respectively. But performance index was not significantly different. However, cost of production of the designed weeder is 20% lower than the conventional weeder.

On the basis of above results, designed weeder can be recommended as better weeding equipment.

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