

DESIGN AND DEVELOPMENT OF A WEEDER AND ROW MARKER FOR SRI METHOD OF PADDY CULTIVATION

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Rice is the staple food for about 50 % of the world population. Rice production should be increased by 50 % by 2025. The System of Rice Intensification (SRI) is a new methodology for increasing the productivity of irrigated rice. Major problem in SRI method is rapidly growing weeds due to space between rows of paddy and unavailability of proper equipment to facilitate marking of rows and weeding. Weeding is facilitated by the marker since it assists row cultivation. Thus, weeding and marking are mechanized together for appropriate small and medium scale farmers to increase the quality, efficiency and productivity of rice farming systems. The new device has several components such as frame, which carries all the parts together, traction devices, with containing blades to destroy weeds, skippers, which help to reduce the friction, sinking and bearing the weight, handle, which used to apply the force for the operation and marker attachment, which carries marking rods with 20 cm spacing of paddy. When using the device as a marker iron rods should be attached to the hind cross bar and couple of hind traction wheels are removed. In weeding, the height of the floaters and the angle of the handle can be adjusted in order to increase the cutting depth and to facilitate the application of force. Damages to paddy plants are reduced by adjusting the ground clearance using nuts and tread bars according to the height of plants. Suitable average forward speed for better operation was 0.078 km/h. The theoretical and actual field capacities were 0.0064 and 0.0048 ha h⁻¹, respectively. Field efficiency was 75%. The weed destroying percentage was 87.4%. Thus, the implement is well recommended to row marking and weeding processes in SRI method.

Key words: Marker, Paddy cultivation, SRI method, Weeder