

Development of a Weed Suppression Robot for Rice Cultivation Weed Suppression and Posture Control

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Abstract : Weed suppression and weeding are necessary measures for rice cultivation. Weed suppression precedes the process of weeding. It means suppressing the growth of young weeds and creating a weed-less environment. If we suppress the growth of weeds, we can reduce the number of weeds in a paddy field. This would result in a reduction of the weeding work load. In this paper, we will show how we developed a weed suppression robot for the purpose of reducing the weeding work load. The robot has a laser range finder for autonomous mobility and a robot arm for weed suppression. It travels along the rice rows without stepping on and injuring the rice plants in a paddy field. The robot arm applies force to the weed seedlings and thereby suppresses the growth of weeds. This paper will explain the methodology of the autonomous mobile, the experiment in weed suppression, and the method of controlling the robot's posture on uneven ground.

Keywords : mobile robot, paddy field, robot arm, weed

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