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Pre and post plant herbicidal weed management in transplanted rice

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Field experiment was conducted from September 2011 to January 2012 at Wetland farm of Tamil Nadu Agricultural University, Coimbatore to study pre and post plant herbicidal weed management in transplanted rice. The experiment was laid out in a factorial randomized block design with three replication and two factors viz. pre-plant herbicide application (with and without glyphosate at 0.75 kg a.i ha^{-1}) and pre emergence/early post emergence herbicide treatments consisting PE butachlor 1.25 kg a.i ha^{-1}, pretilachlor 0.75 kg a.i ha^{-1}, almix 20 g ha^{-1} on 3 DAT followed by hand weeding at 40 DAT, EPOE Bensulfuron methyl + pretilachlor (6.6 GR) @ 0.06+0.60 kg a.i ha^{-1} at 10 DAT, hand weeding twice at 20 and 40 DAT and unweeded control. Pre-plant application of glyphosate 0.75 kg a.i. ha^{-1} recorded lower weed density and dry weight compared to non application of glyphosate. Among the weed control treatments, at 20 DAT, pre emergence application of pretilachlor at 0.75 kg a.i ha-1 + HW at 40 DAT significantly reduced the weed density and dry matter production. At 40 DAT and 60 DAT, Bensulfuron methyl + pretilachlor (6.6 GR) @ 0.06+0.60 kg a.i ha^{-1} at 10 DAT recorded lower weed density and weed dry weight, followed by pretilachlor 0.75 kg ha^{-1} + HW at 40 DAT and HW twice at 20 and 40 DAT . At 20 DAT, maximum weed control efficiency (WCE) and minimum nutrient uptake by weeds were recorded in pretilachlor 0.75 kg ha^{-1} + HW at 40 DAT, followed by butachlor 1.25 kg ha^{-1} + HW at 40 DAT. At 40 and 60 DAT, EPOE application of Bensulfuron methyl + pretilachlor (6.6 GR) @ 0.06+0.60 kg a.i ha^{-1} at 10 DAT, recorded the higher weed control efficiency and lower uptake of nutrient by the weeds, followed by pretilachlor 0.75 kg ha^{-1} + HW at 40 DAT. Among the different weed control methods, highest net return and B: C ratio was obtained with EPOE application of Bensulfuron methyl + pretilachlor (6.6 GR) @ 0.06+0.60 kg a.i ha^{-1} at 10 DAT (Rs.33120 and 2.19, respectively), followed by pretilachor at 0.75 kg a.i ha^{-1}+ HW at 40 DAT (Rs.30054 and 2.11, respectively).

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Robot design of agricultural

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The agriculture sector of India is one of the largest occupations and the largest contribution to India's economy. A lot of issues come along when the Farmers are harvesting their crops. One such is the problem of watering the crops on a timely basis with the exact quantity. In this project we have mainly come up with an idea on how to water the specified portions of the land with the sufficient water whenever needed. We have designed a Robot which has the capacity to Store Water in itself and also move around in the land in the stipulated path without spoiling the crops, to reach the crop area using Artificial Intelligence which checks the whole land for any water level reduction in the land and by priority basis covers the entire land and waters the crop, all this is done with the help of IP camera as its vision sensors, Wi-Fi and controller. The robot has a water sprinkler attached to its 6-axis robots end effector. The water level in the land and the amount of water needed is attained using soil /moisture sensors and the temperature and humidity of the soil is sensed using temperature and humidity sensors which are connected to the microcontroller and the power supply unit. The microcontroller sends the signal to the robot using wireless transmission and hence the robot moves to the location and waters the plant, which is sensed using flow sensor. This robot is an autonomous robot which has the capability to function on its own without any external human guidance.

Biography

T Balaji was born in Tamil Nadu, and has obtained BE (mechanical) in 2011 from Anna University and now studying in MTech (Robotics) at SRM University Chennai. He has published more than 12 papers in conferences and reputed journals. He has successfully completed one government project named "solar aircraft of unmanned aerial vehicle design" during the year 2011 and won many best project awards.

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