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Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Weed management
Keyword 2	: Yield gaps
Keyword 3	: Ecological approaches
Title of Entry	: Current technologies and challenges for weeds management in rice of Asian-Pacific region
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Rice (<i>Oryza sativa</i> L.) is the staple food of 56% of world population and is grown by 144 million farm families. 90% of world rice is produced and consumed in Asian-Pacific region. Weeds are major constraints for attaining optimum productivity and production to meet the food demands of projected 9 billion population by 2050. Losses caused by weeds were reported to range from 2 to 98%, depending on the rice establishment method, weed species, and their density, rice cultivar, interference distance

and duration and associated cultural, physical and biological factors. Several chemical and non chemical weed management technologies were evolved and advocated to farmers for managing weeds in rice in Asian-Pacific region. Weed control with herbicides is the major method of weed control in developed countries of the region (Australia, Japan and Korea). The research work done and technologies developed for managing rice weeds in developing countries are mainly herbicides based. However, the non chemical methods are mainly used by farmers either alone or in combination of other methods including herbicides. The labor non-availability and increased labor cost and availability of economical and effective herbicides options is resulting in increased use of herbicides in rice in developing nations also. The shift in method of rice establishment from transplanting to direct-seeding of rice (DSR) is occurring due to increasing pressure from labor, water and land shortages. Adoption of DSR is resulting in increased weed competition, increased herbicide use, shifts in weeds flora, difficult to control weeds (weedy rice, *Leptochloa chinensis*) predominance, and appearance of herbicide tolerant weeds. Greater understanding of weeds ecology and management as influenced by climate change, prevention of invasive weeds dissemination in the era of globalization, evolving simple mechanical tools for wee management to integrate with other methods, innovative use of biocontrol, allelopathy and robot in weeds management, improving herbicide application methods (using unmanned air vehicles, drones, weeds detecting sensors) to improve efficacy and reduce cost, herbicide resistant weeds management, evolving location specific economic and eco-efficient integrated weed management strategies which use herbicides judiciously area few of major future challenges in managing weeds in the Asian-Pacific region.

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