

Nutrient removal by rice and associated weeds as affected by crop establishment methods and herbicides in direct seeded rice

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ABSTRACT : A field experiment was conducted during rainy (*kharif*) season of 2006-07 and 2007-08 to study the nutrient removal by rice and associated weeds as affected by crop establishment methods and herbicides in direct-seeded rice (*Oryza sativa* L.). The weed flora emerged during experimentation were grassy like *Echinochloa colonum*, *Echinochloa crusgalli*, *Cynodon dactylon*, sedges like *Cyperus rotundus*, *Cyperus iria*, *Fimbristylis miliaceae* and broad-leaved weeds are *Eclipta alba* and *Cesulia oxilaris*. Establishment of rice by drum seeding significantly reduced the density of complex weed flora and their dry weight and increased the growth and yield-attributing characters finally led to 2.54 and 3.18 q/ha higher rice yield over the wet (42.47 and 42.86 q/ha) and 7.15 and 5.77 q/ha over dry seeding (38.86 and 40.278 q/ha) of rice during 2006 and 2007, respectively. Drum seeding of rice was also found most effective in minimizing the nutrient depletion by weed and maximizing the nutrient uptake by rice. Application of pretilachlor fb 2,4-D (0.75 fb 0.5 kg/ha) was most effective in reducing the weed density and their dry weight, and thus enhancing growth, yield attributes and yield of rice. Nutrient depletion by weed was minimum under pretilachlor fb 2,4-D (0.75 fb 0.5 kg/ha) resulting crop utilized higher nutrients.

Key Words: Crop establishment methods, direct-seeded rice, herbicides, nutrient uptake, weeds.