

Influence of *Azolla* Application on Rice Yield and Weed Suppression in Paddy Field

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The integrated use of organic and inorganic fertilizers is desirable to sustain paddy cultivation. A field experiment was conducted at Rice Research Station, Paranthan, Sri Lanka to develop an effective weed control and economic gain from paddy yield in irrigated dry zone. The experiment was carried out during the period of November-February, 2017 (*Maha*), using randomized complete design with 06 treatments *viz*; T1; Without *Azolla* and chemical fertilizer, T2; apply *Azolla* only, T3; apply *Azolla* with 25 Kg N. ha⁻¹, T4; apply *Azolla* with 50 Kg N. ha⁻¹, T5; apply recommended level of nitrogen 100 Kg N. ha⁻¹ without *Azolla* and T6; apply *Azolla* with recommended level of nitrogen 100 Kg N. ha⁻¹. The nutrients K₂O and P₂O₅ were applied to all the plots based on the recommended level. Results showed partial suppression of weed growth by *Azolla filiculoides* created by a heavy, interlocking mat under full plot area coverage. The range of weed suppression at 15 days after sowing was 64.21-88.31 % and at flowering it was 70.54 - 88.5 %. There were however differences in the effects of *Azolla* on different species of weeds. *Azolla* failed to suppress the growth of some weeds such as *Aeschynomene indica*, *Ipomoea aquatic* and *Cyperus iria*. Plots with combined application of *Azolla* and different levels of nitrogen fertilizer revealed greater value for weed control efficiency. There was no significant difference in the yield in plots treated *Azolla* with recommended level 100 Kg/ha of N, *Azolla* with half of recommended level 50 Kg/ha of N and recommended level 100 Kg/ha of N without *Azolla* (6066, 5966 and 5533 Kg/ha respectively). Therefore the use of *Azolla* in the rice cultivation has a greater influence on suppressing the weeds and also reduces the nitrogen fertilizer and herbicides application requirements.

Keywords; *Aeschynomene indica*, *Azolla*, Fertilizer, Suppress, Weeds.