

Variation of weed diversity in irrigated rice fields of *Thirappane* tank cascade system in *Malwathu Oya* river basin in Sri Lanka

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Abstract

Rice weeds growth in minor tank rice fields of the North Central Dry Zone of Sri Lanka has been reported in early 1985; however, their dominance and variation along the tank cascade system are still unknown. For effective weed management practices, the availability of such information is a prerequisite. Thus, the present study has examined the weed diversity in irrigated lowlands along the *Thirappane* tank cascade system in the dry zone of Sri Lanka. Rice fields under six tanks of *Thirappane* tank cascade were selected for this study. Twenty four farmer fields were selected from the cascade system representing its total population. Quadrant method was used to obtain weed samples and the number of weeds within quadrant was counted. Data was analyzed using Simpson's Diversity Index and Shannon Wiener Index to determine the diversity levels. According to the results of Simpson's diversity index (0.6 to 0.76) and Shannon diversity index (1.02 to 1.46), gradient of weed diversity was recorded from upper tank to lower tank in the cascade. Both indices reported relatively high values indicating rich diversity of the weed population in rice fields. Further, the results revealed that the most dominant weed type was sedges *Cyperus difformis* (number of weeds = 71) and *Cyperus pulcherrimus* (number of weeds = 50). In conclusion, when planning and deciding weed management strategies, more attention should be given on *Cyperus* species in rice fields in the *Thirappane* tank cascade system in *Malwathu oya* river basin in Sri Lanka.

Keywords: *Rice fields, Tank cascade system, Weed diversity, Weed management*

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