

A SURVEY ON *CYRTOBAGOUS SALVINIAE*: A PREDATORY INSECT OF *SALVINIA MOLESTA* IN TANK CASCADE SYSTEMS OF MEDAWACHCHIYA DIVISIONAL SECRETARIAT OF SRI LANKA

U.G.A.I. Sirisena^{1*#}, Y.K. Chandrasekara², S.S.K. Hemachandra³, N.P.H. Wimalananda⁴, and K.G.S. Nirmanee¹

¹Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka

²Sri Lanka Teacher Service, North Central Province

³Seed Certification and Plant Protection Service, Department of Agriculture, Gannoruwa, Peradeniya, Sri Lanka

⁴Seed Certification and Plant Protection Service, Department of Agriculture, Mahailupallama, Sri Lanka

*Correspondence E-mail: anura@agri.rjt.ac.lk, Phone: +94776931120

Presenting Author

Abstract: Tank cascade systems are threatened by the presence of aquatic weeds, which interfere with the water storage, irrigation water delivery systems and maintenance of canals and drains. *Salvinia molesta* is one of the major noxious invasive weeds in the tank cascade systems of Sri Lanka, causing severe environmental problems to their ecosystems. Control of this weed with biocontrol agents has been showing promising results in many parts of the world. *Cyrtobagous salviniae*, a biocontrol agent of this weed, was introduced to Sri Lanka in 1986 by the Department of Agriculture. The lack of information on the ecology of these weeds and their distribution is one of the key problems in implementing a sound biological control program in the north-central province. Therefore, the objectives of study were to identify the abundance and distribution of *S. molesta* and the population density of *C. salviniae* in selected tanks in the Medawachchiya divisional secretariat. The quadrat sampling method was used to find predator and weed density in 28 selected tanks located in the Medawachchiya Divisional secretary areas of Sri Lanka. The index of dispersion and intraspecific mean crowding of predators were also calculated. Results found that the surfaces of the Medawachchiya and Kadawathrambewa tanks were covered more than 80% with the *S. molesta* while less than 40% of the water surfaces were covered in 16 other tanks. The abundance of *C. salviniae* was significantly different ($P < 0.05$) among the tanks, and higher predator densities were recorded in Kadawathrambewa (10 ± 3.20) and Mahadiulwewa (9.06 ± 3.45) and the lowest densities were recorded in Siyabagaswewa (1.3 ± 1.25) and Periyakulama (0.9 ± 0.88) tanks. Among the tanks, Dutuwewa, Siyabalagaswewa, and Periyakulama showed low intraspecific crowding, indicating a lower population. Therefore, the re-introduction of predators is urgently necessary.

Keywords: Biocontrol; Invasive weeds; Irrigation water; Predator-prey population