Impact of early cultural practices on the non-native problematic weed, *Paspalum scrobiculatum,* in the paddy fields of the Northern Province of Sri Lanka.

S.Sritharan,[1] A.S.K. Abeysekara,[2] and G. Mikunthan[3].

[1]*Seed Paddy Production Farm, Department of Agriculture, Paranthan*

[2]*Rice Research and Development Institute, Batalagoda*

[3]*Dept of Agricultural Biology, University of Jaffna*

Rice is the staple food grain consumed in Sri Lanka. The yield of paddy is influenced by plant, soil and climatic factors. *Paspalum scrobiculatum*is a non-native wild Kodo millet, which was reported to be a weed in the paddy fields of Sri Lanka. In 2013, this weed was found spreading in all five districts of the Northern Province, reducing the yield of paddy. Grains, seed rhizome and stolons are the propagative materials of this weed. To minimize new sprouts of wild Kodo millet during the early stages of establishment of paddy, the existing cultural practices need to be analyzed. Hence, this research was carried out to investigate the impact of different land preparation methods on the population of wild Kodo millet and the yield of paddy. A field experiment was conducted with five treatments, namely, (i) ploughed by disc plough followed twice by tine tiller at 2 week intervals (T_1); (ii) ploughed by offset harrow followed twice by tine tiller at 2 week intervals (T_2); (iii) ploughed by offset harrow followed twice by Rotovator at 2 week intervals (T_3); (iv) prepared by tine tiller followed twice by Rotovator at 2 week intervals (T_4); (v) ploughed by disc plough, followed by offset harrow after two weeks, then prepared by tine tiller after a further two weeks (T_5). The Bg 300 paddy variety was tested. Weed count, number of grains per panicle, weed dry matter and yield of paddy were recorded and analyzed. The results revealed that the T_1 protocol had given the significantly lowest weed count (2.8 /m^2), and weed dry matter (7.86g/m^2) together with highest yield of paddy (2.96 mt//ha),compared to T4, which was commonly practiced by the farmers. Subsequently this method was practiced during the *yala* season of 2015 in a previously highly weed grown field (8.6/m^2), and it was found that the weed population was considerably lower (3.0 /m^2). Hence land preparation in dry sown paddy fields practiced by the disc plough followed by the tine tiller twice at two weeks interval in *P. scrobiculatum* infested fields would be the best eco-friendly solution for reducing its population to a significant extent.

Keywords: *Paspalum*, wild Kodo millet, paddy, weed, land preparation